American Journal of Public Health
and THE NATION'S HEALTH

Volume 28 August, 1938 Number 8

Mercury Poisoning from the Public Health Viewpoint*

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MERCURY has ranked prominently among the causes of poisoning for several hundred years. It was known to the Egyptians in 1600 B.C. The knowledge of mercury accompanied the gradual spread of Egyptian culture to Greece, and from Greece the information passed to Rome, and thence over the Roman Empire. The Egyptians, Greeks, and Romans considered mercury too toxic for medicinal use.

Mercury was known in India about 500 B.C. where its medicinal value was recognized during the 1st century A.D., and mercury stomatitis was described during this time. The medicinal knowledge of mercury spread from India to Persia, and thence to Arabia. The Arabs brought this knowledge to Africa and Spain during the Moorish conquests. The Arabs recognized the symptomatology of mercury poisoning and made more progress in its use than the Europeans of the Middle Ages.

Paracelsus, about 1525, advocated the use of mercury in treating syphilis and also advised its oral administration. He gave the first explanation of the effect of mercury upon the body. Due to the teaching of Paracelsus, the demand for mercury increased and a larger number of workmen were employed in mining; thus, mercury poisoning among miners was common. Fallopius in his treatise on metals states that quicksilver miners rarely last 3 years in the mines. According to Ramazzini,[1] Etmuller affirms that in 4 months in the mercury mines the miners are seized with tremblings in the joints, palsies, and vertigo, because the mercurial spirits prove highly injurious to them. In the *Transactions of the Royal Society of London,* April, 1665, is a letter sent to this society from Venice which states that in some quicksilver mines in Italy no workman is able to work over 6 hours at a time, and an account is given of one miner, who, having worked for one-half year, was so impregnated with mercury that if he held a piece of brass in his mouth, or handled it with his fingers, it became white.

Ramazzini [1] affirms that the metallic steams affect not only those who dig

* Read before the Industrial Hygiene Section of the American Public Health Association at the Sixty-sixth Annual Meeting in New York, N. Y., October 5, 1937.

in the mines, but all those who are employed in working, melting, and refining the metal.

At that time mercury poisoning was very common among gilders. Ramazzini describes the case of a young gilder who died from mercurial poisoning after 2 months of confinement to his bed: " the patient was of a cachectic habit of body, face wan, cadaverous complexion, eyes swollen, breathing labored, mind stupid, and the whole body seemed seized with an inactive lazy drowsiness. He had fetid breath, stinking ulcers in his mouth which voided incessantly a very great quantity of nasty matter." Ramazzini was amazed at the absence of fever during this man's illness.

INDUSTRIAL USES OF MERCURY

Apart from the widespread use of mercury in medicine, there has been a constant increase in the use of the metal in industry. Among the applications of mercury and its compounds may be cited the use of mercury nitrate in the manufacturing of felt, which dates from the 17th century.

Industrially, mercury is used in the manufacture of chemicals and scientific instruments, and for the amalgamation of gold. It is also used in the electrical industry. This wide use entails a certain hazard from exposure to vapors and dusts. Dublin and Vane [2] list approximately 80 occupations with exposure to mercury and its compounds.

In Table I are listed the chief indus-

TABLE I

Principal Industries with a Potential Mercury Hazard

Name		*Description*	*Remarks*	*Principal Method of Entrance Into the Body*
Mining	Cinnabar (HgS)	Hazard depends upon the process used; hazardous occupations are those connected with condensers, purification, flask filling, distillation repairing and cleaning	89 mines in U. S. 1933; since 1934 several new mines in U. S. have begun operations	Inhalation of vapors and dusts
	Gold	Amalgamation with mercury, closed process used at present		Inhalation of vapors
	Silver	Amalgamation with mercury		Inhalation of vapors
Chemical manufacture	Manufacture of organic and inorganic mercury compounds	Inorganic mercurous and mercuric compounds, as chlorides, nitrates, iodides, cyanides; and organic compounds such as mercurochrome, metaphen, dimethyl and diethyl mercury compounds	Inorganic compounds propounded by wet and dry method; dimethyl and diethyl mercury are volatile toxic compounds	Skin, ingestion, and inhalation of vapors and dusts
	Mercury as a catalytic agent	Starting with acetylene, using salts of mercury as catalytic agent, to produce synthetic alcohols, ketones, and acids; volatile toxic organic mercury compounds also produced Sulphonation, oxidation (Kjeldahl) bromination, nitration, alkylation (Friedel and Craft)		Inhalation of vapors
	Cyanogen	Cyanide of mercury decomposes by heat liberating cyanogen and mercury; mercuric oxide plus hydrocyanic acid gives mercuric cyanide		Skin contact; Inhalation of vapors
	Chlorine	Electrolytic process—Solvay process with sodium amalgam		Inhalation of vapors

TABLE I (Cont.)

Principal Industries with a Potential Mercury Hazard

Name		*Description*	*Remarks*	*Principal Method of Entrance Into the Body*
Alloy Makers, including amalgam makers		Mercury forms amalgams with most metals readily. It does not form an amalgam with iron, nickel, aluminum, cobalt and platinum.		Inhalation of vapors
Electric	Standard cells	Mercurous chloride and metallic mercury		Inhalation of vapor
	Mercury switches			
	Mercury vapor lamps			
	Electric contacts and insulators			
	Electrodes	Amalgamation of zinc		
	Accumulators	Amalgamation of zinc		
	Incandescent electric lamps	Production of the vacuum, rarely used at present		
	Electric meters			
	Electric furnaces	Sealing induction furnaces with mercury		
	Radio tubes	Production of vacuum by mercury		
Manufacture of felt hats	Fur cutting	Carrotting solution composed of a solution of mercury nitrate. In the U. S. practically all employees exposed to a measurable concentration of mercury vapors	2,000 employees in U. S.	Inhalation of vapors and dusts
	Felt hat industry	From the mercury nitrate solution used in carrotting the fur, chief occupations with mercury exposure are: mixers, blowers, coners, devil operators, hardeners, sizers, starters, stiffeners	27,600 employees in this industry	Inhalation of vapors and dusts
Dentistry		Treatment by heat of mercury amalgams especially silver and copper amalgams	Dentists Dental technicians	Inhalation of vapors
Laboratories		Manipulation of mercury Spilled mercury accumulates on floors, work benches, etc.	Chemists Physicists Physicians, etc.	Inhalation of vapors Skin
Pharmaceutical		Manufacture of antiseptics, cathartics, diuretics, disinfectants, bactericidal agents, ointments and solutions containing mercury or mercury compounds, both organic and inorganic. Spilled mercury	Chemists Physicians Laboratory assistants	Inhalation of vapors and dusts
Manufacture of	Vermicides Insecticides Fungicides	Organic and inorganic compounds of mercury. $HgCl_2$ used in wood impregnation		Skin Inhalation of dusts
Explosives	Detonators Detonating fuses Percussion caps Pyrotechnics	Mercury fulminate in copper or brass tubes $Hg(CNO)_2$ used $Hg(CNS)_2$ used in Pharaoh Serpents Hg_2SO_4 used as chemical catalyst	Hamilton found 111 cases of poisoning from Hg. fulminate in 1916 in 28 Amer. munition factories	(Dermatitis) and Inhalation of dusts and vapors
Decoration of chinaware and porcelain		HgO and Hg_2CrO_4 used for decorating chinaware and porcelain		Inhalation of vapors Irritation of skin
Photography		$HgCl_2$ and $HgBr_2$ used as intensifier Mercuric double rhodanide		Inhalation of vapors Absorption from skin

TABLE I (Cont.)

Principal Industries with a Potential Mercury Hazard

Name	*Description*	*Remarks*	*Principal Method of Entrance Into the Body*
Printing Trades	Pantone process employs a paste with mercury as a basis for cleaning silver typographic plates as well as for typographical operations. Vermilion is used in some inks. Production of printing plates. Color printing as used in linoleum		Inhalation of vapors
Battery	Dry battery manufacture; heat used in melting and soldering, volatilization of the mercury. Hg_2SO_4 used as a chemical catalyst in electric batteries Lead mercury solder		Inhalation of vapors
Paint	Mercury is a constituent of antifouling paints for ship bottoms. Tin-bismuth-mercury amalgam as a paint mixed with oil		Inhalation of dusts and vapors
Engraving, embossing	$HgCl_2$ used in etching of steel. Damascening of guns and swords $Hg(NO_3)_2$ used		Inhalation of vapors and dusts, skin
Mercury vapor boilers	A process of power generation which uses mercury instead of water in a boiler Use of mercury vapor for heat transfer in operations such as chemical reactions or distillations, as used in the petroleum industry		Inhalation of vapors
Jewelry	Production of imitation jewelry, copper gilded by the mercury process, or by plating process. Waste, debris, etc., washed and triturated in a mill with mercury, forms amalgam, then freed from Hg by heat. Metallic mercury. Heated mercury amalgams		Inhalation of vapors
Shooting galleries	Mercury vapors liberated from use of mercury fulminate percussion caps		Inhalation of vapors
Taxidermists	$HgCl_2$ used to treat skins for conservation		Skin and Inhalation of vapors and dusts Dermatitis
Anatomical preparation	Tin, lead, bismuth amalgam injection		
Embalmers	$HgCl_2$		
Backing of mirrors	Mercury very little used at present		
Glass globe coating	Mercury used in coating		
Bronzing	Mercury may occur in bronze as a contamination of tin		
Cosmetics	Mercury compounds used in the preparation of hair lotions and freckle preparations		
Hardening process	Hardening tools in mercury		
Dyeing of woolen goods	$Hg(NO_3)_2$ in dyeing woolen goods		
Manufacture of aniline red	$Hg(NO_3)_2$ in making aniline red		
Printing of cotton goods	$HgCl_2$ used as a mordant		
Artificial flower making	HgI_2 used for coloring		
Color manufacture	Vermilion used as an inorganic dye		
Mordants for seed	Chlor-phenol-mercury and nitrophenol-mercury		
Fuchsin	$HgCl_2$ used in production		

tries in which mercury is used, the methods and type of hazard in each industry, and the manner in which mercury may be introduced into the body. It may be seen that mercury entails exposure of a considerable number of workers and represents a public health problem of some magnitude.

TOXICITY OF MERCURY

The introduction of mercury into the body may occur by 4 routes:

1. Inhalation of vapor or finely divided dust
2. Ingestion
3. Through the skin
4. Through the subcutaneous tissues

Industrial mercurialism occurs almost exclusively from the inhalation of the vapors of mercury or the dust of mercury compounds. The oral administration of metallic mercury is toxicologically unimportant. The toxicity of most of the salts of mercury is well known. Mercury is absorbed to a slight degree through the skin by way of the hair follicles and sweat glands.

The absorption of the inorganic compounds of mercury takes place chiefly through the digestive tract. Some of the organic derivatives of mercury, as dimethyl and diethyl compounds are volatile toxic substances. In industry the absorption of mercury through the subcutaneous tissues occurs only through an accident, as when thermometer bulbs or other glass instruments containing mercury are broken and penetrate the skin.

The toxicity of mercury and mercury compounds depends upon their physical-chemical properties, as the solubility, dissociation, and volatility, as well as upon the dosage, length of exposure, route of introduction, and individual sensitivity. Mercury locally has a caustic and irritant action.

Fulminate of mercury, used in the manufacture of detonators and percussion caps, produces chronic mercurialism, and also characteristic skin and superficial mucous membrane lesions. The skin of the majority of persons employed in mixing, drying, filling, and preparing the fulminate shows these characteristic lesions. In 1930, 20 per cent of the mercury used in the United States was in the making of fulminate.

To indicate the manner in which chronic mercurialism can occur, I will utilize a considerable amount of the data collected by the Public Health Service in a study of the hatters' fur cutting industry,[3] which entailed a study of approximately 500 workers exposed to mercury vapors and dust. This publication indicates the manner in which the public health aspects of chronic mercury poisoning may be evaluated, gives the characteristic symptoms of incipient mecurialism, and its prevention.

SYMPTOMATOLOGY

The symptomatology of chronic mercurialism falls into two types, one with stomatitis, colitis, and nephritis predominating, and the other with tremor and other neurological symptoms predominating. Many authorities are of the opinion that the intestinal, buccal, and renal symptoms are evidence of acute mercurial poisoning. According to Scopoli, Merget, and Biondi,[4] mercury compounds taken into the body through the digestive system or parenterally circulate in the body in the form of a mercury chloro-albuminate or oxy-chloro-albuminate, and cause the lesions during the excretion through the kidneys, colon, and the salivary glands. Mercury taken into the body in the form of vapor circulates as such, or in other combinations, and gives rise to the nervous symptoms, tremor, spasms, erethism, and also to emaciation and cachexia. However, both forms of poisoning may occur simultaneously.

According to Biondi,[4] when the mercury vapors in the air are of a

higher temperature than the mucosa of the respiratory tract, the mercury is condensed upon its surface and is then not absorbed in vapor form but as a combination similar to other mercury compounds. Under these circumstances the two forms of intoxication would be mixed, for not all of the vapor would condense and some would reach the mucous membranes at a lower temperature than that of the mucosa. In that case there would develop, besides tremor, spasms, erethism, and emaciation, at least stomatitis and even colitis and nephritis. While this is an interesting hypothesis and while there is no question that the two forms of mercurialism exist from a symptomatology viewpoint, it would be interesting to prove this by experimental investigation.

In the study of mercurialism among 529 fur cutters made by the U. S. Public Health Service in 1935 and 1936, it was found that the greater part of the mercury to which fur cutters were exposed was present as vapor and that a comparatively minor part was due to mercury-impregnated dust. Forty-three cases of mercurialism were found. The most important physical impairments were fine intention tremor, psychic disturbances, exaggerated knee jerks, vasomotor disturbances, simple inflammation of the nasal mucous membranes and conjunctivae, discolored oral mucous membranes, and gingivitis. Albumin, casts, erythrocytes, and leucocytes were found with about equal frequency in the urine of mercury-affected and non-affected workers.

Gingivitis (including both pyorrhea and gum inflammation in which pus exudation was not demonstrable) was somewhat more prevalent among persons with chronic mercurialism than among those not so diagnosed. However, the incidence of gingivitis had no direct relation to the degree of mercury exposure, and was no greater in groups with a high mercury vapor exposure (over 2.5 mg. per 10 cu.m. of air) than it was for groups with a low mercury-vapor exposure who were employed for the same length of time.

It will be noted that the symptomatology in these 43 cases was of the neurological type, the outstanding symptom being intention tremor.

THRESHOLD DOSAGE

The quantity of mercury in the air which is sufficient to cause chronic mercurialism cannot be definitely stated. Age, sex, individual susceptibility, and the physical condition of the individual play some part in determining his reaction to mercury-vapor exposure. The largest amount of mercury is eliminated in the urine, and a lesser amount in the feces. Mercury is also eliminated in the saliva, sweat, and milk. According to Gutman, the urine may show mercury for months and even years after the metal intake. According to Young, Taylor, and Merritt,[5] during the period of active urinary excretion, the mercury is found in rather high concentrations in the muscles, bones, liver, and kidneys, but following this the muscles and kidneys show only a trace and the concentration in the bone apparently remains unchanged. They conclude that mercury is stored in the bones and to a lesser extent in the liver, and that this storage is influenced by the pH of the diet, and the administration of acids or alkalis.

Borinski,[6] in the Berlin Department of Health, found that human beings who have never come into contact with mercury may excrete up to 1/100 mg. of mercury a day. Nearly all important foodstuffs contain traces of mercury. Individuals who work with mercury daily, as dentists, laboratory workers, etc., show daily excretion up to 1/10 mg., and the possibility of mercury

intoxication should be considered in these individuals when they complain of so-called nervous disturbances.[6]

Göthlin[7] states that 0.4 to 1 mg. of mercury inhaled daily in the form of vapor causes chronic mercurialism. Turner[8] states that 0.771 to 1.285 mg. of mercury absorbed daily will produce symptoms of mercurialism. Fraser[9] found in dogs that a concentration of 1.89 mg. of mercury to 1 cu.m. of air inhaled 8 hours daily for 40 days caused no evidence of mercurialism, and that the minimum concentration of mercury leading to intoxication was 3.05 mg. to 1 cu.m. of air. The Leningrad Institute of Organization for the Protection of Labor permits only traces of mercury in the air. In the study of mercurialism among fur cutters, the Public Health Service found that the symptoms of chronic mercurialism developed among individuals working in atmospheric concentrations ranging from 0.6 to 7.2 mg. per cu.m. of air, also that the severity of chronic mercurial poisoning and the percentage of persons affected increased with the degree of exposure. The incidence of chronic mercurialism increases rapidly with increasing mercury concentration after the concentration exceeds 2.0 mg. per 10 cu.m. For instance, of the 377 persons exposed to 2.0 mg. or less per 10 cu. m. at the time of the study, 4.5 per cent were diagnosed as having chronic mercurialism, and of the 152 persons exposed to greater concentration, 17.1 per cent were so diagnosed.

DIAGNOSIS OF CHRONIC MERCURIALISM

The diagnosis of chronic mercurialism (industrial) depends upon a careful physical examination, which includes a thorough occupational history: (1) the individual's present occupation, and the length of time he has been engaged in it; (2) a record of all the occupations he has been employed in from the time he first began to work; and (3) an estimate of the total time he was employed. The physician should know the occupations in which there is a mercury hazard. An occupational analysis by trained engineers is usually necessary in order to determine the exact occupational exposure. The industrial hygiene sections of several of the states have personnel who are prepared to make such analyses.

In the medical history, complaints of diseases of the nervous system, psychic disturbances, digestive disturbances, insomnia, loss of appetite, tremor, loss of weight, sore mouth, and weakness should be especially noted.

The following conditions should be especially noted: pallor, simple inflammation of the nasal mucous membrane, gingivitis and pyorrhea, discoloration of the mucous membranes, excessive salivary flow, dark line on the gums, stomatitis, fine intention tremor of hands, fingers, eyelids, and tongue, shaky hand-writing, speech defect, psychic irritability as shown by irascible temper, discouragement without cause, feeling of discouragement or despondency, excessive embarrassment in the presence of strangers, anxiety and excitability, exaggerated knee jerks and vasomotor disturbances such as excessive perspiration, abnormal blushing, and dermatographia.

Routine examinations should be made of the urine, looking for evidence of renal pathology. Twenty-four hour specimens of urine should be analyzed for mercury. In our fur cutting study the quantitative spectrographic method was found to be the most practical and accurate method for this analysis. The presence of mercury in the urine is not necessarily a symptom of chronic mercurialism, it can only be regarded as proof of mercury absorption.

It is hoped that in the near future a spectrographic method will be worked out for the determination of mercury in blood. A complete hematological

examination should be made; however, no one finding can be considered *per se*, as definite, positive evidence of mercurialism, as will be shown by the blood picture findings in the fur cutting industry. The erythrocyte count was slightly lower in those with chronic mercurialism than in the nonaffected individuals. Persons with the symptoms of chronic mercurialism had almost the same hemoglobin index and total leucocyte count as those who did not have these symptoms. The difference between the reticulocyte percentage of the mercury-affected and nonaffected males was 0.2370 ± 0.1074, which was possibly, but not certainly statistically significant. The mean values for both groups were slightly higher than normal.

Other cytological data collected as stipple cell and blood platelet estimations, had little diagnostic value as far as chronic mercurialism was concerned.

The percentages of lymphocytes found in the blood of these fur cutters were slightly higher than usual and the percentages of neutrophils were correspondingly lower than usual. Although the interpretation of these differences was complicated by several circumstances which could not be controlled, it appeared that they were not necessarily the result of mercury absorption. The fact that the monocyte percentages were within normal limits substantiated this view.

PREVENTION OF INDUSTRIAL MERCURIALISM

The prevention consists primarily in the avoiding of the inhalation of mercury vapors and dusts. This is an engineering as well as a medical problem, requiring special local exhaust ventilation, good natural and mechanical ventilation, good housekeeping, and general sanitation, and in certain occupations positive pressure masks.

From a public health standpoint it is essential to determine the extent of a hazard and to develop methods which can be employed for its control. In its study of the hatters' fur industry, the Public Health Service surveyed all of the plants in the United States, which employed approximately 2,000 persons. These workers were further analyzed according to occupation and from such preliminary data it was possible to determine the number exposed to fur which had been treated with mercury, and to determine the extent of the mercury hazard in this industry.

Following the occupational analysis, a study was made of each occupational environment and determination of the amount of mercury vapors to which the worker was exposed. It was necessary to obtain dust samples to determine the amount of mercury in this form which was inhaled. The evaluation of the industrial environment is of use in obtaining an estimate of the relative degree of mercury hazard associated with each occupation, and, where control is used, its effectiveness. In studies of the health of industrial workers the quantitative data with respect to each occupation have shown a high degree of correlation with medical findings. Quantitative estimates of the amount of contamination present in the air are also a measure of the effectiveness of control methods as Table II indicates.

From a medical viewpoint it is necessary to make periodic medical examinations of individuals exposed to a mercury hazard, paying particular attention to the symptom complex of mercurialism, as outlined.

Mild, early causes of chronic mercurialism, characterized by fine intention tremor of the hands or fingers, and slight evidence of psychic irritability, can be discovered during periodic medical examinations and the workers removed from their mercury exposure. They usually recover in a short time under symptomatic treatment, and

TABLE II

Exposure of Hatters' Fur Workers to Mercury Vapor and Treated Fur Dust Under Controlled and Uncontrolled Conditions

Occupation	Total Mercury Exposure in Milligrams per 10 Cubic Meters: Uncontrolled	Controlled	Method of Control
Drummers	2.5	0.6	Segregation
Clippers	1.5	0.7	"
Brushers	3.1	1.2	Local exhaust ventilation
Cutters	4.0	1.8	" " "
Sorters *	3.8	1.7	" " "
Blowers	4.6	0.7	" " "
Pilers	5.4	Trace	Good natural ventilation
Storage workers and shippers	7.2	Trace	" " "

* Depend on exhausts installed on cutting machines.

should not be returned to their old occupation until the mercury hazard has been controlled.

Patients with severe chronic mercurialism, characterized by intention tremor of a marked degree, erethism, denoted by a continuous irritability, and pronounced vasomotor changes, are completely disabled for any work, and require months of careful medical and nursing care.

It may be seen from the foregoing that the public health problem with regard to chronic mercurialism is one of preventing mercury from being ingested or inhaled by the worker. Its prevention from the engineering standpoint is one of providing a sanitary and healthful environment, and from the medical one of recognizing early symptoms. Chronic industrial mercurialism is preventable with good engineering and medical control.

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Edward Jenner Memorabilia

JENNERVILLE, Pa., was named after Dr. Edward Jenner of Berkeley, Gloucestershire, England, by Dr. Francis Allison who lived in this hamlet of Chester County between 1839 and 1859. An exhibit of portraits of Edward Jenner and other memorabilia has been in existence for years in a brick mansion built in 1740, located on Route 1 and now known as the Red Rose Inn.

Among the exhibits is a declaration attesting the appreciation of local residents for the priceless discovery of the method of vaccination against smallpox.

The Case of Public Health vs. Public Welfare*

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THE subject which is printed by my name is possibly a little mystifying to you, "The Case of Public Health vs. Public Welfare." It is a little mystifying to me, too, though I had a fairly clear notion of what was in my mind when I suggested it. That poverty and disease have very close interrelations of cause and effect, that we are bound to find many matters of common interest between the agencies and the persons dealing with them, is, of course, a commonplace. It has been set forth at these meetings perhaps more fully and more convincingly than ever before. Except for the period of depression we are now passing through, it has been an axiom that sickness produced more poverty than any other one cause.

The finest account of the historical development of the relations between the authorities dealing with health, public health in the sense that we use the word ordinarily, and poverty, is contained in Sir Arthur Newsholme's last book, *The Last Thirty Years in Public Health*.† About the first third of that is devoted to what is to me a very fascinating but fully clear, objectively stated, and convincing statement of what has actually occurred in Great Britain as between those two subjects, as to important legislation, and as to administration, over the last quarter of a century.

I strongly recommend that each of you, whether health officer, social worker, or public health nurse—however you are interested in the subject—read that book.

I will not try to discuss that total general picture, because it has been done repeatedly. It is a thing that is going to be worked out in practice by actual effort rather than in the seclusion of the library or in the bill drafting departments of Congress or of state legislatures. I will speak of only a few phases of it, bringing to you a rather unassorted miscellaneous group of thoughts and comments. I am, so to speak, bringing the public welfare official and the public health official into court and putting a few questions to them.

The first thought that occurs to me is one that is familiar to many of you, no doubt. That is, that public health as an organized movement in English speaking countries is the direct outcome and the actual child of the Poor Law Administration. It is rather important, I think, to bear that in mind and to get the origins of things somewhat clear.

In 1834 there was a great wave of interest in the Poor Law in Great Britain, as you know, and one of the most classic and celebrated government

* Read at a Special Session "Public Health Today," of the American Public Health Association at the Sixty-sixth Annual Meeting in New York, N. Y., October 8, 1937.

† Obtainable through the A.P.H.A. Book Service.

reports of all times, that of a Royal Commission on the Poor Law, was submitted in 1834. The main author of that report was one Mr. Edwin Chadwick, who later became Sir Edwin Chadwick, and, as sometimes happens after a thing is put over, he found himself as the executive charged with carrying out the new provisions of the new Poor Law for Great Britain, which he had outlined and mainly written.

He came at the thing from a somewhat new point of view. He was a political economist, one of the early ones, one of the fully convinced ones. Quite soon in the course of his management of the Poor Law Administration, of bringing about some coördination and some national supervision of the Poor Law Administration by local authorities, there was a great epidemic in London. There were several of them as a matter of fact, but there was one very notable one of cholera, and the only protection that was then thought of was to meet in the churches for prayer.

Sir Edwin thought more could be done than that, and he put a question (it recurred to him and it worried him) to his bosses, the Poor Law Board: "Wouldn't it be cheaper and better to restrain epidemics than to go on taking care of so many widows and orphans? Shouldn't we, the Poor Law Board, get busy on this question of preventing these recurring epidemics which cost us, for so many years after, such enormous sums of money?"

If you recall the history, the Poor Law Board, eminent people, said in substance, "Well now, you just lay off on that business that you are talking about. That is none of your affair. Our job is to take care of the poor. Somebody else has to do what is to be done, if anything can be done, about what you are talking about."

But he was a very persistent fellow. He was a cantankerous, obstinate kind of a man who never knew when he was licked. So he kept on, and he appealed to the government of the time being to take up the question. His bosses got very angry when he went over their heads, and before long he lost his job as the executive of the Poor Law Board of Great Britain.

But his views prevailed, for about that time, in the late 1840's (the great Poor Law reform was in 1834), the government listened to him. They created, in 1848, the first national authority dealing with public health in Great Britain. Mr. Chadwick then, having lost his Poor Law job, was put in charge of the new Board of Health, created as the result of his interest and his agitation of the subject.

I wish to nail down one fact—that the proposal to establish a national health authority, though it emanated from the former chief executive of the Poor Law Board, did not propose that the new health authority should have anything particular to do with or about those who were subjects of relief in Great Britain. Quite the contrary, it was to deal with the whole community. It was going to deal with the entire population. It set out specifically to deal with the causes which produce poverty. It intended to keep other people, not then destitute, from being forced to join the ranks of the indigent. It did not contemplate any special action or provision for those who were already on relief.

Jumping from 1848 to 1937, we find ourselves, in this country, in this state, and particularly in this city, faced with the proposal that the work of the public health authority, in his efforts to prevent communicable diseases, and in the diagnosis and care of communicable diseases (and diagnosis and care are essential factors in the prevention of such diseases) should limit his services and his efforts to those persons who are indigent. This, to the

best of my knowledge, is a new proposal in public health work in this or any other country. In the light of its historical setting and, above all, in its bearing upon the future of the public health movement, it is an exceedingly serious proposal. It is by no means just a dispute about official jurisdiction over particular activities. It goes to the very root of the public health movement, its objectives, its underlying purpose, and its possibilities for public well-being. It should not be accepted without the most careful consideration.

That is the issue between public health and public relief which I wish to discuss today. I spoke of it in the title of this talk, as the case of Public Health vs. Public Welfare, because if the principles of public welfare administration, which by definition deal with the indigent, are to be extended to public health activities, then public welfare will have done public health and public well-being more serious harm than all the great benefit which it has previously contributed to the public health movement. I will state 7 considerations in support of this opinion.

1. The first point is that, as I have just shown, the new proposal is flatly contrary to the origin, spirit, and trend of the public health movement up to now.

2. The second point is that it is flatly contrary to the present program in those countries which have actually succeeded in achieving a high degree of success in dealing with a major public health problem—the control of syphilis. I refer to the report of a recent commission from this city, which investigated this subject, consisting of the Commissioner of Health of this city, a representative of the 5 County Medical Societies here, a representative of the State Medical Society, and of the U. S. Public Health Service, which states in its General Conclusions that among the facts generally believed to be the most important in syphilis control in the Scandinavian countries and in Great Britain is "the fact that in all of these countries diagnosis and treatment are free, accessible, and generally good." The commission adds, "In all these countries diagnosis and treatment are free to all without economic distinction." In entering for the first time upon a really concerted nation-wide movement to control syphilis, would it not be indefensible to ignore and, in fact, to proceed directly counter to, a principle which, in the opinion of such authorities, has been of prime importance in the notable success secured in these 4 countries.

3. My third point is that to limit the scope of the public health authority to indigents would be a departure from the practice of every department of municipal government, except only that department which has been specifically created to deal with indigents. It is possible to talk so much about the indigents as to gain an impression that public services generally are for the special benefit of the indigent. Nothing could be further from the case. Public services, almost without exception, are for the benefit of the entire public, and deal with the people as a whole, and as individuals, without reference to their economic status. These public services could have been set up conceivably upon a different basis; but they were not, and no one, so far as I know, has proposed that they should be. Take a look for a moment at a few of the major services of a municipality.

There is the fire department. If my house takes fire, I send a call to the fire department, and it very promptly comes to my rescue. The fireman is a curious type of person. He has a single track mind and is dominated by only one idea. When he arrives, he does not say "Good morning" and chat with me and my family for a few minutes, to cultivate useful contacts for the future.

He asks only one question—"Where is the fire?" His manners are bad; he is terribly direct in his approach; he runs all over my place with his muddy boots; he takes his muddy hose up the stairway and chops through the side of the wall, or into the roof. He does anything and everything, regardless, in order to get water on the fire at the right time, in the right place, and enough of it to put the fire out. But he is a great success in putting out fires. I have sometimes thought it would be a good thing if all health officers, before they were appointed, were required for a couple of weeks to ride the fire engine, and see how the fireman tackles his job —for fires also are catching. Fires can be put out by water, but it requires skill to get water to the right place, at the right time, and enough of it. Syphilis can be put out with arsenic and bismuth, but they must be applied in the right place at the right time, and in the right amounts. The important thing is the result, not the economic status of the person having the communicable fire or disease. But fires are all the fireman is concerned with. He does not stop a minute when I send the call, or when he arrives, or while he is putting the fire out, to ask whether I will be able to pay for his service. Of course I probably could pay for it, if the city should send me a bill. As a matter of fact, I do pay my share of putting out all the fires in the city whether my own house takes fire or not. Each year my tax bill includes my share as a taxpayer of the cost of putting out fires, but the service is free to any and all when the fire gong rings.

The police of my city watch over my house when I am away for the summer, or at any other time. They take a look at it nearly every day. When I return, unless I think to notify them, I am only in my house for a very few hours before the policeman knocks at the door to see if I am home, or whether some person has broken in. The police department never sends me any bill for these services. I could pay for it directly, but I pay for my share of it in the tax bill, as does every other resident of the city. I am not expected to hire a private watchman of my own, though possibly I might be able to do so. That is not the way public service is organized.

The park and playgrounds of this city, and of every city, are open to all comers. There are no parks and playgrounds set aside for the indigent, for their particular use and benefit. Nobody inquires as to how many of the people using the parks and playgrounds could pay for that privilege.

Public housing provision has been a very active subject in the last few years. The federal government, the individual states, and the municipalities, by one plan or another, have built many apartment houses, or individual houses in groups. No one, I think, has had the hardihood to suggest that any one of these provisions should be set apart for the indigent only. It is difficult to think of a suggestion which would be more generally unpopular. They are for persons of limited income to be sure, but that is a very much larger group. They may be occupied in part by people who receive relief money, from which the rent is paid, but never exclusively by such persons.

There was once, in 1820 in New York State, a suggestion that all those receiving public relief should be brought together in one housing provision in each municipality, or county. It was maintained that the indigent would receive better care; that children would be better trained; they could more readily be provided with work. It sounded good. Such a law was passed. Logically, this common housing of the indigent was called "a poor house." Its history is known to all. Its development was the most outstanding failure

of any public enterprise ever undertaken. The indigent do not wish to be grouped together. They bring to each other only humiliation and despair.

Education, of course, is the great outstanding instance of a public service, open to all, availed of by practically everybody, and paid for by those able to pay and in proportion to their ability to pay.

As public health workers, we should hesitate long before accepting for the public health authority a completely different basis of administration and action from that of practically all other municipal departments.

4. My fourth point is that a public health service for indigents would inevitably fail to attract any considerable public interest, or to be granted any considerable private or public support. This is, in fact, a matter of great moment. The public health authority has been given legal powers quite beyond those of any other department, and public funds to meet any emergency, *because* it is generally understood to be protecting the health of *all* the people. What a different appeal any health agency would be making if it were clear that it would deal only with indigency. How far, for instance, would a National Association for the Study and Prevention of Tuberculosis among Indigents have gotten as compared with the tremendous organization and great resources of the National Tuberculosis Association for everybody? What would an American Association for the Health of Indigent Children have been able to accomplish? How far would Col. Snow have been able to get if he had established an American Association for Social Hygiene among Indigents? How far would *any* public health department get if it were in name and in fact a department for the protection of the health of the indigent? It would have no appeal to the imagination; it would speedily reach the status to which it would be entitled, and to which it would properly belong, that of a medical bureau in the Department of Public Welfare.

5. My fifth objection to limiting any public health service to the indigent is that, speaking broadly, there is no such group. There are a great many people who were indigent yesterday, but are self-supporting today, even though they may be indigent again tomorrow. The rapid turnover of the relief rolls all through the depression has been one of its chief characteristics. People are on and off the relief rolls, and on and off again, as the changing tide of employment or of good fortune may affect them. Over a period of years, there are enormous variations in the number of the indigent, using that term in its ordinary sense. In 1929, there were no public indigents, and only a few private indigents, in New York City. Four years later 20 per cent of the population were indigent. The percentage has wide swings up and down. No health program can be built on such a shifting basis. Both tuberculosis and syphilis require long-term planning and long-term care. The shifting of the individual patient to and from the status of indigency has no conceivable relation to the care he needs, and, above all, no relation to the steps that need to be taken in relation to him, to prevent other people from being infected by him.

But apart from the shifts in the ranks of the needy, there is no generally accepted test as to what constitutes indigency. Is an old age security allowance, though based on need, a form of indigency? Is a so-called extended unemployment benefit, though based on need, a proof of indigency? Are widows' pensions, though granted on a relief basis, for the indigent? You might think so, but we are spending hundreds of millions of dollars each year in these United States to prove the contrary,

and the people believe the contrary.

On the other hand, it is even more true that huge numbers, millions in fact, of those whom we call non-indigent and self-supporting, are not in truth, and in reality, self-supporting. They are not supported in any fair sense of the word, either by themselves or by anybody else. Their standard of living is so desperately low that they do not really support themselves, they merely continue to exist in a poor dying way. Truly, they need health provision desperately, but they are not in the ranks of the indigent; they are not on the relief rolls. No one can look at these fundamental facts about the economic status of the people of America without realizing that there is no basis for a public health program anywhere, at any time, in attempting to draw a distinction between the indigent and the non-indigent.

6. For my sixth point, let us push this thought one stage further. Dr. Lee K. Frankel, a true statesman in social welfare and public health, and a great leader in this American Public Health Association just 10 years ago, stated on several occasions that unless conditions changed, the end of poverty and of the need of relief was in sight. He said that the great family welfare societies of New York City, would be able within a few years, unless trends changed, to devote all their funds and all their efforts to providing education, recreation, and generally a higher standard of living among those with low incomes, for there would be no further occasion for material relief. He was speaking primarily of the people of this city. Of course, conditions *did* change, and his prophecy seems now somewhat grotesque. It would be a great mistake, however, to think that he was not fundamentally justified in 1927. In fact, I have no considerable doubt that the attainment of what he foresaw then, a few years ago, has been simply postponed and by no means abandoned. I think we have arrived at an American policy in regard to poverty. It consists of two major elements: (1) the preventable causes of poverty will be prevented; (2) non-preventable poverty will be called something else, and dealt with by different methods and on a different basis.

I say all this to raise the underlying health question. If there should be no indigency in a few years, will there be no need for public health and no health authority? The question answers itself. It is inconceivable that we should not have a stronger and a more efficient public health authority under such circumstances. We could afford to do more for health, and there are endless areas to be covered, innumerable things to be done, before we have prevented all preventable illness.

7. My seventh point is that the methods and objectives of public health and of public relief are different fundamentally and also from the point of view of the psychology of the public, and are wholly incompatible with any identification of the two subjects. Poverty is something which everyone dreads, everyone seeks to avoid, every welfare authority seeks to limit, in the area of its application. Poverty is excessively unpopular. The public mind is set against it. Those on relief naturally and properly make every effort to conceal the fact. Health, on the other hand, is something which everyone desires and desires more strongly than anything else. It is a goal toward which everyone strives. It is cherished next to life itself, and occasionally even life seems undesirable without health. Health promotion takes on wider vistas with every new scientific discovery. Public health seeks to make available that ever increasing area of health facilities which the individual cannot afford, and that area of protection the individual cannot provide for himself. Yoked to

indigency, health would be on the way out. Anchored to the community as a whole, health is on the way in.

RELIEF AND HEALTH

For these seven reasons, then (and there are plenty of others), it is apparent to me that relief and health, although on the same highway, are moving in opposite directions. The more efficient either or both of them become, the farther apart they are. The destination of one is universality; the destination of the other is disappearance. These destinations are as far apart as East and West, and " East is East, and West is West, and never the twain shall meet."

PREVENTIVE MEDICINE

It is implied in what I have said that I am dealing with public health in the older and more limited sense of *preventive* medicine. I deem that an exceedingly important point, and I hold the position that it is not only possible but exceedingly important, not to get preventive public health confused with the whole question of medical care.

Sir Arthur Newsholme [1] in his paper a day or two ago—and he is the man from whom I have learned more about public health than from anybody else—referred to preventive medicine and clinical medicine as being Siamese twins. Even Sir Arthur might be mistaken once, you know. I hope he is mistaken, for I have always felt that to be a Siamese twin was one of the least desirable of all possible modes of living.

In the first place, twins are apt to be much alike, physically, mentally, and emotionally. You expect twins to be alike. But public health organization is very different in many respects from the practice of medicine. For one thing, the public health official wears peacefully, or even proudly, the badge of public office—of serving the whole community, as part of the government, of fighting disease wherever it is, and not only in some selected sector.

On the other hand, you all know that if you are in a medical society, you must be very careful about mentioning government at all, because there might be explosions, mishaps, and other unforeseen things like that. In other words, there are reactions, emotional, mental, and temperamental, which are very different. So they can't be twins —clinical and preventive medicine. That is, they don't look alike, and they don't act alike, and they don't think alike.

A second thing is, I think, conclusive. Twins have to be born at about the same time. There can be a little lag, I believe, between twins—as to the hour of birth—but it can't be very long. Sir Arthur said that the public health movement was a little less than 100 years old; the practice of medicine, as you all know, began around 400 B.C. You could not have a lag of 2,200 years between the birth of twins, could you?

So, I prefer to see these two great services, for the present and for some time to come, one chiefly governmental and one chiefly individual, each established on its own feet, without trying to act like twins; each having its own normal development, each serving its purpose, each accumulating its own experience, each adjusting itself to the needs of the community from time to time. I do not want to see at this time any attempt to merge things that are as different as public health, a governmental service, and the private practice of medicine. That may come in the future, but not yet, nor soon.

REFERENCE

1. Newsholme, Sir Arthur. The Health Department in the Field of Medicine. *A.J.P.H.*, 27, 11:1089 (Nov.), 1937.

The Health Department in the Field of Medicine

From the Standpoint of a Private Practitioner*

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THE potentialities of preventive medicine have developed almost as amazingly in the past few decades as have medical diagnosis, surgical technic, and endocrinology. This as a part of the daily, commonplace realization of medical health department workers. To the rank and file of practising physicians these potentialities are dreams, imponderables. When we first suggested an aggressive program to incite interest and undertaking in preventive medicine, an eminent metropolitan surgeon with an unusually broad knowledge of medicine in general remarked "There is little we can do about it for it is summed up in the use of a few specific vaccines and serums." Per contra, health department workers are almost as astonished as are newspaper editors when they hear of medical cures or successful surgical operations which are ordinary occurrences in medical practice. We do not understand each other well enough to benefit our people with an adequacy of service comparable with our conjoined abilities in a state of fusion.

Theodore Roosevelt once said "'Together' is the grandest word in the English language." Mutual understanding and endeavor are resultant implications and should be translated into accomplishments. To do this we must be frank with each other. We know intimately a married pair who seldom have impatient words with one another, but when the servants irritate and disturb the wife, she relates eloquently to the husband their shortcomings, mistakes, or impertinences. He has, after patient listening, uttered the stereotyped kindly response "What good will it do to scold me? Why not tell *them* about it?" In kind, when we have shortcomings tell *us* about it—not your associates. We are learning to tell you when policies or actions seem shortsighted, ineffectual, or unjust, and are instructed and gratified with the courtesy and coöperation in your response.

During the meeting of the Sixth District Branch in Owego on September 21 the presidential address was captioned "Preventive Medicine and Tuberculosis." Therein we indulged in the following fantasy—"In organizing a renewal of the campaign for the prevention of early tuberculosis compare our 'man-power' to that of a foot-ball team. The health departments, financed and directed by the state and local governments, furnish the runners who cover much ground, the

* Read before the Health Officers Section of the American Public Health Association at the Sixty-sixth Annual Meeting in New York, N. Y., October 5, 1937.

half-backs and full-backs, and the quarter-back who calls the signals. What can they do against the 5,000 year old tubercle bacilli deployed all over the field, without a strong scrimmage line? With the general practitioner as center-rush, roentgenologists as guards, surgeons at tackle, and specialists on the ends, we may have some chance of winning. Hearty coöperation is therefore most desirable." This illustrates our dream of coöperation in this line of work.

Physicians think that health department officials and doctors of public health who have regular hours, 9 to 4, or 9 to 5, good salaries, offices and equipment furnished, and with no professional expenses, proceed to undermine the practitioner of medicine who has long hours, irregular sleep, often broken or abolished for 24 to 48 hours, no salary, often large earnings with heavy expense and scanty collections. They believe public health doctors do not see anything of many dangers hanging over the people and pay no attention to physicians' warnings. They have a close view of illness and prevention and a close view of tragic happenings.

Public health doctors think—physicians roll around town luxuriously making largely social calls for large fees, really do little work, have no interest or patience with health department matters, especially those most important affairs in which health departments dominate but need physicians' coöperation. They lack adequate appreciation of the great work of the great mass of physicians and surgeons. Theirs is an aeroplane view of disease and prevention with little or no personal experience with tragedies of life except as read through collected and carefully arrayed statistics.

When we realize how few practising physicians attend a convention like this or conferences of health officers, and how few health officials are regular attendants at their county medical society, state society, or national meetings, we comprehend that in general the scope of vision in matters mutual are naturally restricted. However, there are bright spots which we can consider as exceptional and happy examples of what can happen. The secretary of the Medical Society of the State of Kentucky is the State Commissioner of Health. It is evident that your Association regards this ambidextrous gentleman with approval for you have selected him as your next President. In Alabama the State Medical Society *is* the Health Department and selects the Commissioner. Any one who has had the privilege of knowing and appreciating the qualifications and accomplishments of the present Commissioner of Health in Alabama will join us in felicitating that state upon its health arrangements. Undoubtedly health departments, under the present magnification of party politics, cannot always be under such ideal direction, for lay government is not infallible in its knowledge of scientific qualifications. In New York State and in New York City we have been and are now most fortunate.

Locally if a health officer *is* an active member of his county society and in frequent conference with its officers and committees, health matters proceed with notable satisfaction. We have discovered several such localities in our official visits to districts in this state. Where the health department and the county society each "goes it alone" separately in health matters, both grumble more or less about the conduct of the other. They should work together. Objectives are identical—why not coöperation?

In order to fulfil our obligations upon this program we are supposed to discover some of the "encroachments on medical practice" by health departments. If we were narrow enough to

define the word "encroachment" with meticulous accuracy we could say that nearly all health department activities are encroachments. However, as we recognize that "generally accepted custom makes law" (as well as language), and as physicians of the past have approved of the building up of the health departments' provisions in mass preventive medicine and custodial care, we inherit these regulations, with gratitude for the efficiency which has been demonstrated. As physicians we wonder if this efficiency would not be enlarged if our coöperation were habitually sought before plans are made and activities started, as has been notably the case in this state in the programs for controlling syphilis and pneumonia.

Some encroachments exist which are largely sporadic and local or personal, usually with the complete innocence or ignorance of clear principles by the subordinate officer in charge. An example far from here:

A health officer who is also a school inspector referred so many children with a certain type of ailment to physicians and consultants of his state department for *treatment*, that the people of that community came to believe that this was the best way to have such cases managed and, regardless of the capacity of parents to pay, demanded that their children have the same free care. When it was called to his attention by local physicians he said he was helpless—that the people demanded it, and he dare not change else he would lose his position.

In general, we believe that whatever may rightly be called encroachments upon medical practice are largely due to the limited knowledge of the majority of practitioners concerning the technic of disease prevention (except in specific prevention, as in smallpox, diphtheria, typhoid, tetanus, etc.), balanced by the limited appreciation of health officers and associates of how earnestly and devotedly physicians in general work for their people. The remedies: For the general practitioner, awaken his interest and train him in preventive medicine. For the health officer, advise him to join and work in his county, state and national medical societies so that he will understand the spirit of practising physicians and, combining their viewpoint with his own, become more useful and accomplished. In other words, develop more McCormacks and Bakers.

We believe that centralized clinics for the administering of specific remedies for prevention and for other preventive activities could wisely be replaced by sending this work to physicians' offices with payments for the physicians, on condition that the county medical society members accept guidance by the department, as in the Detroit plan. Some say this is more expensive. It is; but it would recompense the community to have every physician beneficently compelled to interest himself in prevention, whereas, the multiplication of centralized clinics tends to cause an increasing atrophy of interest on the part of physicians. It is the social effect upon them and the community that reduces the proper advantage to the community that is far more important than the small returns in dollars. As in remedial services to the indigent, the community by paying the physicians for care of the indigent will be commensurately rewarded, for, as has been wisely remarked by F. E. Elliott:

"Every community has a vital stake or resource in the financial prosperity of its physicians." They must not occupy their minds with worries about how to exist and support their families.

Surely, as our great Surgeon General has said, "The taxpayers will determine how much they will pay for health service."

The taxpayers *can* be made to under-

stand the need of greater appropriations for health work. Henry Vaughan has done it, and it should be accomplished everywhere not only for the purposes above mentioned, but also because the salaries of physicians who are health department officials are grossly inadequate, when we consider the required time given to preparation and training. The health department of a city is quite as important as the fire department; yet we are informed by credible authority that the mere change of the firemen in this city to a 3 platoon system involves a larger expenditure per year than the *entire* appropriation for the health department. You can rebuild burned houses! Should we watch undisturbed the destruction of human lives because of scrimping appropriations?

In general we believe that *treatment* of all conditions, when patients are not under custodial care by governments, should be referred to private physicians. For instance, competitive treatment clinics should be avoided in venereal disease work. Diagnostic clinics? Yes! Treatment—No! As soon as the state or community takes this over many physicians are not interested, and the physician's office is the look-out station for such cases. In the current war on syphilis inaugurated by Surgeon General Parran while Health Commissioner in New York State with the coöperation of the State Medical Society, every possible effort to comply with this principle is made. However, it would be a wise provision in such instances to have all physicians so treating such cases qualified by their county society and made amenable to regulations made by the county society and the department. In other words, not every physician is trained and qualified to treat syphilis efficiently. If this work is to be distributed, only trained and qualified men should be utilized.

The approved roentgenologists should be generally used in X-ray case finding in tuberculosis and their services available daily throughout the year. The occasional spasmodic attacks by various health organizations using commercial laboratories or technicians is entirely inadequate. Health department diagnostic clinics for the indigent, and in rounding up of contacts, are of course necessary in many areas, and we understand that competent roentgenologists are the interpreters and consultants. The best talent we have is none too good or too expensive in this service.

State subsidized laboratories of pathology, bacteriology, and serology are reputed to be providing unfair competition for private laboratories in that gratuitous services are given to those competent to pay, or substandard fees are charged. The contention that such laboratories should adhere to charges mutually agreed upon in non-indigents seems reasonable. Some prominent gifted laboratory directors feel that there is great danger to private practitioners along this line, and great disheartening of young practitioners. We quote one of these:

"From my own viewpoint as director of a private clinical pathological laboratory, I can assert that the State Department of Health, through the State Laboratory and State Subsidized County Laboratories, offers most unfair competition. They are *eager* to furnish free laboratory service to any patient when requested by a private practising physician or surgeon. Here the latter are short-sighted because every time they call a State Health Department man in and secure free consultation service, they are aiding in the destruction of the practice of private clinical pathology. If they succeed in destroying this branch of medicine as a private enterprise, they will next try to take over medicine and surgery (which they are already doing in certain areas). They will ultimately reach their goal of obtaining complete control of medical practice by destroying all private practice. We can then look back at events that have happened and thank ourselves for supporting their endeavors."

This physician is a fine citizen and a medical leader in his section and his state. Can we disregard his expressed opinion? We know that with present appropriations control of all medical practice in his state would not be possible. However, he has had some discouraging experiences and we hope that he has already conferred on the laboratory matter.

We need more constructive mutual thought and coöperation, and our urging that "Every practising physician should be a deputy health officer," means just what it said and *was* unanimously approved by the State Medical Society. In this action we are pleased to offer our opinions, our counsel, and our services to health authorities. We believe that this can be duplicated in all states if the genuine desire for service to the people pervades practitioners and health department groups.

We must agree that maximum efficiency in health matters must prevail. Working together is the accepted formula therefore hereabouts.

We believe that periodic health examinations of the apparently well person is the heart of the preventive medicine which falls to the duty of practitioners. There is meager demand for it by the public. Health departments with their many contacts extending out into the realm of the visiting nurses and the child welfare stations can do wonders toward enthusing the public over this regular inspection and record. We believe accurate permanent records are essential to ultimate ideal success. Ward Crampton believes that a hundred years from now each candidate for periodic health examination should be able to lay before his examiner the records of his great grandparents. Is this such an idle dream? Think of the disabilities and lives saved all along the century! We can all assure the people that such complete examination will be competent insurance against a definite proportion of prevalent diseases which are sneaking up behind them unnoticed or their *apparently* trifling symptoms disregarded. Or, as in cancer, where the duration of the growth is often in doubt, patient and physician can be sure that its inception dates from some time after the last periodic examination record.

This is one way in which you may help us to prevent disease with the use of forces and people at your command.

Tell us how we can help you! We realize that the license to practise medicine implies other obligations than the diagnosis and treatment of disease. I would not be here today if this were not true. With the knowledge the state has proved we possess, we should not be merely the audience when the play "Prevention" is staged. Tell us how we can help you! Integrate us into your systems wherever it is possible, remembering and asking taxpayers to remember, that the majority of practising physicians live on a smaller income than the average of the inadequate salaries of health department physicians—and the majority of these physicians deliver first class service in stout-hearted self-sacrificing spirit without regard to hours or convenience.

Here, as elsewhere, there is strength added in union of efforts and "Together" should be our motto.

There is one final point which must be frankly disposed of. Health departments, welfare agencies, and other public health organizations, on the one hand, and the medical profession on the other, all contain a certain very moderate percentage of self-seeking, narrow-minded, thoroughly commercial persons, whose expressed views are based in reality on expectations of dollars and cents return to themselves, not on the welfare of the people. Some of them have subsisted for years on the golden products of superheated volubility interspersing a few facts charred beyond

recognition. Those in the public health group decry the medical profession and all its works thinking to make more places and salaries for themselves, climbing by pulling the other fellow down. Their most violent criticism of a physician's opinions is "He went medical." That in their estimate is the lowest depths of moral degradation. The physicians' group referred to claim that public health workers interfere with their practices; regulations make things hard for them; they steal their work; their money; lessen disease; and hurt their practices.

For these groups, who misrepresent health departments, other public health organizations, and practising physicians, and disgrace themselves, we must turn aside and do some missionary work, educate them out of their gilt-lined rut, especially those who are destructively vocal. To physicians we can easily demonstrate that the more diligently and faithfully and unselfishly we work for others the greater the emolument—depending of course somewhat upon the chosen field for work and upon the way the word "emolument" is defined. We dare to presume that it is much the same with the comparable successes of health workers. Worth is acknowledged proportionately if not adequately. If we are not successful in our efforts at reformation, how about giving these black sheep a very icy shoulder and studied inattention on all occasions when they are "looking for something good." They do not belong in our ranks.

Prevention of Stream Pollution

IN the iron and steel industry an outstanding problem is to prevent stream pollution by waste liquors from such operations as pickling, in which metal is commonly acid-treated. This industry, after endeavoring to solve this problem for many years at heavy expense, has recently founded, through the American Iron and Steel Institute, a fellowship at Mellon Institute of Industrial Research, in Pittsburgh, with the aim of acquiring novel ideas and attempting a definite solution. This investigation will be carried on until concluded to the satisfaction of health and industrial authorities. It will be the objective to treat or process the waste liquor of pickling plants so as to render it entirely safe for discharging into streams, recovering from it chemicals from which useful products can be made economically.

Willard W. Hodge, professor of chemical engineering and head of the Department of Chemical Engineering at West Virginia University, and also director of the Engineering Experiment Station of that institution, has been granted a year's leave of absence to head the investigational work.

Chloramine Treatment of Sea Water*

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CHLORAMINE treatment has been tried for sterilization of salt water swimming pools along the Atlantic seaboard to eliminate the complaints of patrons concerning the irritation of the throat and eyes by chlorine. These studies were started because of the uncertainty of the effectiveness of chlorine when using salt water with a pH of about 8.0. The following procedure was adopted as the most practical approach to the problem of swimming pool disinfection when the contamination occurs in the presence of the disinfectant.

To a series of 250 ml. clear glass stoppered bottles containing 100 ml. of sea water at laboratory temperature was added a variable quantity of ammonium chloride and a measured quantity of chlorine water. After 3 hours of ammonia and chlorine treatment, 10 ml. of each sample was removed for a residual chlorine test.

The residual sample in each bottle was then inoculated (contaminated) with exactly 2 ml. of cotton filtered raw sewage. After 2, 5, 15, and 30 minutes contact of the sewage with the treated sea water solution, 10 ml. was transferred with a sterile pipette to a sterile test tube containing a small crystal of sodium thiosulphate. Duplicate nutrient agar (Bacto-Difco) plates were immediately prepared from decimal geometric tap water dilutions of the thiosulphate treated aliquots. Using a Lumi-lens magnifier, the bacterial colonies were counted after 24 hours' incubation at 37° C. Residual chlorine was determined by the orthotolidine method immediately prior to, and 15 minutes after, sewage inoculation.

RESULTS

The sea water used in the disinfection studies was obtained from Rockaway, N. Y., off a jetty opposite Beach 19th Street. The more pertinent chemical analyses of the sea water are as follows:

Total Solids	35,708 p.p.m.
Calcium	503 p.p.m.
Magnesium	1,185 p.p.m.
Total Iron	0.36 p.p.m.
Chlorides	17,640 p.p.m.
Kjeldahl Nitrogen	0.144 p.p.m.
Ammonia-Nitrogen	0.07 p.p.m.
Nitrite-Nitrogen	0.0002 p.p.m.
Alkalinity (as $CaCO_3$)	108 p.p.m.

The pH of the sea water was found to be 7.9 electrometrically (Hellige glass electrode apparatus) and 8.0 colorimetrically (uncorrected for the salt effect). Chlorination, equivalent to 1.5 mg. per liter in the presence of zero and 3.0 mg. NH_4Cl-N per liter, had no effect on the colorimetric pH reading.

* Read before the Public Health Engineering Section of the American Public Health Association at the Sixty-sixth Annual Meeting in New York, N. Y., October 5, 1937.

Of 21 series of experiments using a constant dose of chlorine and a variable concentration of ammonia, 8 are presented as representative.

The desk data were analyzed by plotting the logarithm of numbers surviving against time. In cases where less than two organisms survived per ml., it was assumed that the survival was one organism per ml. or one organism per plate. Generally a smooth curve could be drawn connecting all points. In a few instances where a single determination was an obvious error a correction was made.

The original number of organisms present at zero time in a series was obtained by extrapolation of the sea water disinfection curve (the blank). Using the above value as 100 per cent, the percentage survival of organism was tabulated.

In 4 series the chlorine dose was 1.2 p.p.m., and the residual chlorine content at the end of 3 hr. was substantially the same for samples of equal ammoniation. Arithmetic averages of comparable treatments for both residual chlorine tests and the percentage survival of organisms were made and plotted on a semi-logarithmic scale in Figure I. The curves show the survival of organisms in percentage, for disinfection periods of from zero to 30 min.

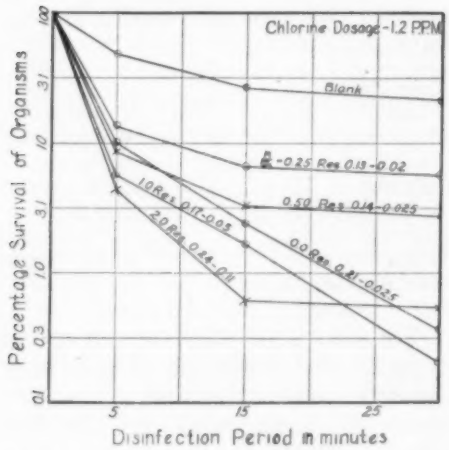

FIGURE I—The relation between the survival of organisms during disinfection with a dose of 1.2 p.p.m. Cl_2 made 3 hours prior to bacterial contamination.

The ammonium chloride treatment is indicated on each curve by the ratio of ammonia nitrogen added to chlorine dose. The average residual chlorine values prior to bacterial inoculation and after 15 minutes of disinfection are also indicated.

The curves show:

1. Sea water itself caused a fairly rapid death rate of sewage organisms. An average of 21.2 per cent survive after 30 min.
2. Sea water chlorination equal to 1.2 p.p.m. without ammoniation caused an increased rate of disinfection (an average of 0.35 per cent survival after 30 min. disinfection).
3. Pre-ammoniation equal to ¼ to ½ the chlorine dose of 1.2 p.p.m. was far less efficient than chlorination alone (5.6 and 2.8 per cent) survival in 30 min. for N:Cl_2 ratio of 0.25 and 0.5 respectively. Furthermore, after 5 min. of disinfection, the death proceeded at a rate very similar to that obtained from sea water alone.
4. Pre-ammoniation equal to and twice the chlorine dose gave a disinfection rate similar to chlorination alone (0.20 and 0.55 per cent) survival after 30 min. with a N:Cl ration of 1.0 and 2.0 respectively.
5. Pre-ammoniation to N:Cl ratios less than 1.0 apparently causes a greater consumption of chlorine than non-ammoniated sea water or ammoniation to N:Cl_2 ratios of 1.0 or greater.

In 4 series of experiments the chlorine dose was 1.4 p.p.m. in 2 series and 1.6 p.p.m. in 2 others. Slight differences in results between the higher and lower dosages were considered insignificant and the 4 series were averaged together. The curves showing the percentage survival of organisms against time of disinfection with an average chlorine dose of 1.5 p.p.m. are presented in Figure II. The curves indicate that disinfection proceeds similarly, but at a more rapid rate than with the 1.2 p.p.m. chlorine dose except for ammonia-

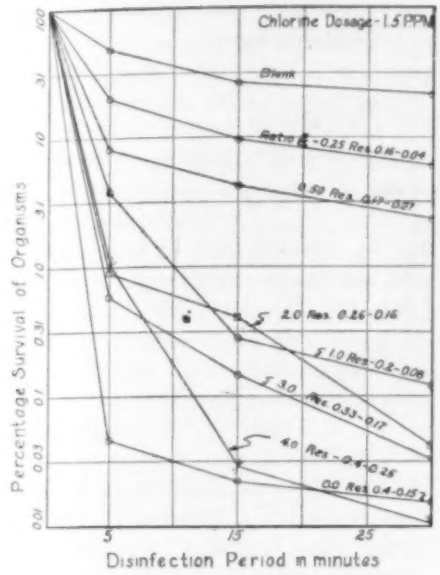

FIGURE II—The relation between the survival of organisms during disinfection with a dose of 1.5 p.p.m. Cl_2 made 3 hours prior to bacterial contamination.

chlorinated ratios less than 1.0. Chlorination alone gave a survival of less than 0.015 per cent in 30 min. Ammonia-chlorination ratios of 2, 3, 4 gave practically the same bacterial kill in 30 min. as did chlorination, although the initial rate of disinfection was less rapid.

The relation between bacterial death rate and residual chlorine can be more clearly presented in Figure III where the percentage survival of organisms in 15 min. is plotted logarithmically against the chlorine residuals in p.p.m. at the beginning and end of the 15 min. disinfection period. The right extremity of each bar represents the chlorine residual at the beginning of disinfection and the left hand extremity the chlorine residual after 15 min. A diagonal line was drawn from a point indicating the average survival in the absence of chlorination to the mid-point of the lower left hand bar in which the ammonia-nitrogen to chlorine ratio was 4.0.

This arbitrary index line shows a fairly definite trend that the 15 min. death rate of chlorine disinfection, with or without ammonia, practically doubles with each 0.1 p.p.m. increase in the mean residual chlorine during disinfection, more or less independent of the ammonia dose and that a mean residual chlorine during disinfection of 0.27 p.p.m. will give an average kill of 99.9 per cent of organisms.

The major drop in residual chlorine of ammoniated sea water with $N:Cl_2$ ratios below 1.0 over that of the chlorinated sample during the 3 hours prior to sewage inoculation was of sufficient interest to warrant further investigations. Eleven additional series of tests were made in which residual chlorine was obtained at frequent intervals over a 3 to 6 hour period. After chlorine-ammonia treatment in the absence of direct sunlight at laboratory temperature a typical series is presented in

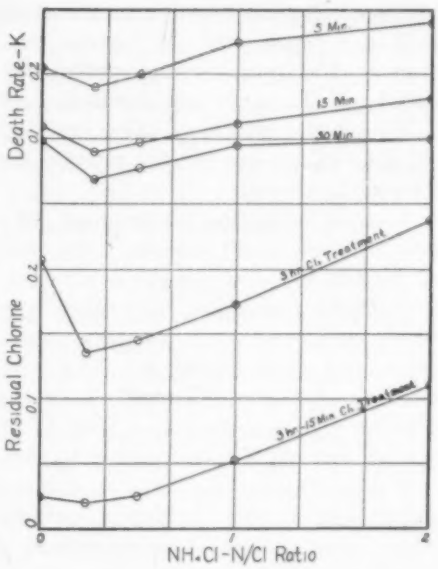

FIGURE III—Relation between bacterial death rates, residual chlorine at the beginning and after minutes of disinfection for different ammonia-nitrogen to chlorine ratios with a chlorine dose of 1.2 p.p.m.

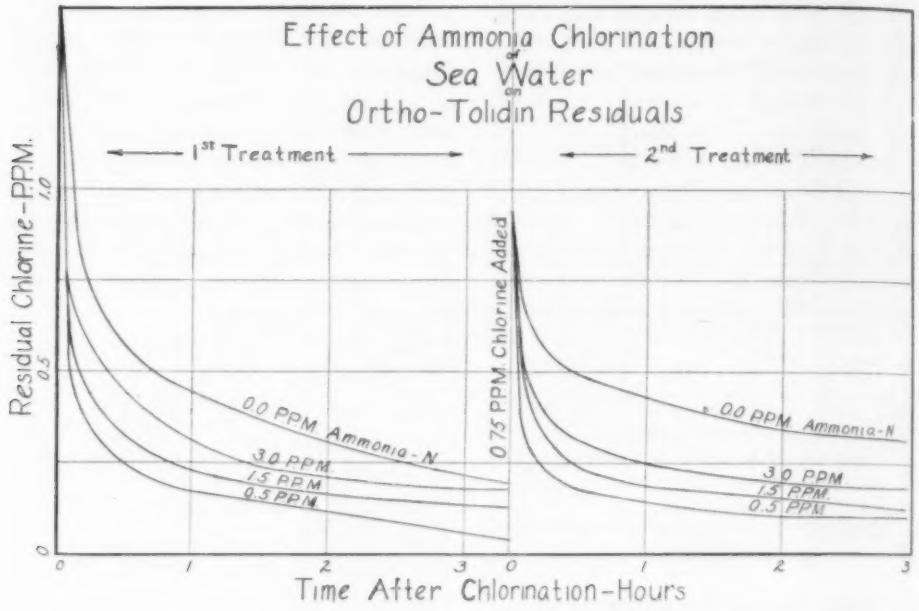

FIGURE IV—Effect of ammonia chlorination of sea water on orthotolidine residuals

Figure IV in which sea water samples containing varying quantities of nitrogen as ammonium chloride were treated with 1.5 p.p.m. chlorine water, and after a 200 min. contact period the samples received an additional dose of 0.75 p.p.m. chlorine. The residual chlorine values are plotted against the time of treatment.

A rapid reduction of residual chlorine occurred in all samples. The rate of residual chlorine reduction was least in samples containing no added ammonia and greatest in samples ammoniated to a slight degree, *i.e.*, 0.5 p.p.m., ammonia nitrogen. Two-thirds of the chlorine dose was dissipated after 5, 20, and 40 min. for nitrogen added to chlorine added ratios of 0.33, 2.0, and 0.0 respectively during the first treatment. After a low residual chlorine tension of less than 0.5 p.p.m. was reached the rate of chlorine reduction materially decreased. Rechlorination of the samples after 200 min. treatment produced results showing again a rapid dissipation of the chlorine very similar to the first treatment.

Preliminary tests indicated an increase in the dissolved oxygen content of ammonia-chlorinated sea water. Apparently low ammonium nitrogen values in the presence of sea water chemicals results in a greater decomposition or break-down of the chlorinous compounds than ammonia-chlorination to high nitrogen to chlorine ratios or chlorination without ammoniation.

DISCUSSION

Disinfection studies of sea water by means of the chlorine ammonia process were conducted to simulate conditions of salt water swimming pool bacterial control. It was assumed that the salt water would be recirculated and that the clarified return water would be chlorinated to maintain a residual chlorine content in the pool to disinfect sporadic bacterial contamination efficiently.

It was observed that chlorine dose

was rapidly depleted. The reduction of chlorine could not be accounted for by the "chlorine demand" of the unpolluted sea water. The rate of break-down of residual chlorine appeared almost equally rapid in the dark as in the presence of diffused daylight at laboratory temperatures.

Chlorination in the presence of an ammonia-nitrogen dose equal to less than, roughly, twice the chlorine dose resulted in a more rapid dissipation of residual chlorine than chlorination without ammonia or ammonia-chlorine treatment to ratios greater than 2.0.

The rapid break-down of chlorine in the presence of small amounts of ammonia nitrogen bears a rather important relation to practical salt water swimming pool control where the ammonia nitrogen in a recirculating system will accumulate due to hydrolysis of urea. It may be advantageous to ammoniate initially and maintain a rather high ammonia content. It is of interest to note at this point that in the disinfection studies the ratio of ammonia nitrogen present to chlorine residual *at the beginning of a disinfection period* exceeded 15 to 1 in all ammoniated samples.

The more rapid break-down or dissipation of residual chlorine in the presence of small amounts of ammonia was observed by Gerstein [2] on Lake Michigan water. The accentuated break-down was not so great as in sea water and the greatest effect was found at somewhat lower ammonia to chlorine ratios. The fact that an abnormal break-down of chlorine did not occur in distilled water led Gerstein to attribute the break-down to the "normal chemical constituents" in the lake water. Ammonium nitrogen in sea water results in a more pronounced dissipation of chlorine and over a wider ammonia nitrogen to chlorine ratio. It is a matter of conjecture whether small amounts of ammonia in conjunction with sea water chemical constituents cause the break-down of hypochlorites or whether the sea water constituents cause a more rapid break-down of certain chloramines.

Considerable investigation [1-5] of surface water ammonia-chlorine treatment definitely indicates the formation of chloramines having a lower disinfecting power than chlorine alone. A perusal of Figure III fails to substantiate conclusively the supposition that chlorine-ammonia compounds are formed in sea water at a pH of 7.9. The curve correlates the degree of disinfection against the average residual chlorine during the disinfection period irrespective of the amount of ammonia present. A similar observation on a number of experiments in which the average residual chlorine during the disinfection period was the same for varying ammonia treatments would be more conclusive but experimentally quite impossible. It was observed, however, that the diminution of residual chlorine during the 15 min. period after the addition of sewage inoculation was 40 to 50 per cent less for ammoniated samples than chlorination alone. This possibly indicates the formation of chlorinous compounds having a lower oxidation potential which is not shown in the disinfecting power.

SUMMARY

Sea water has considerable disinfecting properties on fresh sewage organisms. An average of 80 per cent of the organisms are killed in 30 min.

In sea water polluted with from 2,000 to 20,000 organisms per ml., chlorination or ammonia-chlorination results in an average kill of 99, 99.9, and 99.99 per cent of the organisms in 15 min. time for mean residuals during the disinfection period of 0.15, 0.27, and 0.37 p.p.m., respectively.

Preammoniation of sea water (on the nitrogen basis) equal to ¼ to ½ a

chlorine dose of 1.2 to 1.6 p.p.m. results in the dissipation of ⅔ the chlorine in 10 min. An equal dissipation of chlorine occurs in 30 and 60 min. for an ammonia-chlorine ratio of 2.0 and straight chlorination respectively.

The rate of chlorine dissipation in chlorinated and ammonia-chlorinated sea water is relatively slow after the residual chlorine has reached the 0.5 p.p.m. level.

On the basis of the data obtained, disinfection is a function of the mean residual chlorine maintained during disinfection period irrespective of ammoniation. It appears that with low chlorine doses higher mean residuals may be maintained *in polluted* sea water with the aid of ammonium compounds.

ACKNOWLEDGMENTS

The experimental work reported in this paper was done by workers of project No. 165-97-6999 (6025-994), of the Research and Statistical Division of the Works Progress Administration for New York City, and by Gerald A. Fleet, a graduate student at New York University.

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Measles in Detroit, 1935*†

I. Factors Influencing the Secondary Attack Rate Among Susceptibles at Risk

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IN spite of the ubiquity of measles, epidemiological knowledge of the disease is based upon surprisingly few published studies. Among these Panum's monumental work in the Faroe Islands,[1] has by all odds contributed most. Conditions were unparalleled for determining the incubation period, the variation in the duration of prodromes and other factors which he investigated; yet the observations were made under unusual conditions in a community where measles had been absent for 65 years and where the population was highly susceptible to the infection. Chapin's contribution [2] is a study of measles occurring over 66 years (1858–1923 inclusive) in Providence, R. I. English workers such as Hamer,[3] Brownlee,[4] Soper,[5] and Stocks,[6] have contributed a considerable literature to the theory of the epidemic cycle; Stocks and Karn [7] studied certain phenomena noted in a series of epidemics in St. Pancras. In this country, Collins [8] and Hedrich [9] furnish data concerning completeness of reporting and the age distribution of cases, while Emerson [10] has evaluated the effect of current administrative practice on the incidence, fatality, and death rates of measles. The recent publications on measles from the London County Council [11] deal with administrative and prophylactic measures applied within its jurisdiction.

In general, much which we profess to know about measles is dependent upon clinical impression and inadequate field investigations, without benefit of statistical treatment. Measles is more communicable than most infections. The opinion is quite general that most measles contacts will develop the disease. In fact, parents often consider it unfortunate when all susceptible children in the family do not take the disease at one time, reasoning that it is more convenient to be done with it at once.

It has been stated that 90 to 95 per cent of all children have contracted measles by the time they reach the age of 15 years.[8,9,12,13] Granting this, is it not possible that the communicability of measles may be influenced by certain conditions which have been demonstrated to influence less communicable diseases? Chapin [2] found that 76.2 per cent of susceptible contacts at all ages developed measles when exposed. Stocks [6] states (he contends that in St. Pancras, reporting was only 10 to 15 per cent under the actual occurrence

* Read before the Epidemiology Section of the American Public Health Association at the Sixty-sixth Annual Meeting in New York, N. Y., October 8, 1937.

† This study was made possible through assistance of WPA Project Number 82-4-120—A Survey of Health Conditions in Detroit.

of the disease) that for every reported case of measles there are 3 susceptible persons exposed who do not contract it. He considers them to be temporarily immune, but again susceptible by the time the next epidemic occurs 2 years later. In the light of these contentions it would seem that there is ample justification for a further study of measles as it occurs in epidemic cycles in an urban community large enough to give an adequate number of cases.

SOURCE OF MATERIAL

During 1935, 27,430 cases of measles were reported in Detroit. The cases were classified by families: (1) families in which one or more susceptible contacts received some prophylactic agent, (2) families, no member of which received a prophylactic agent. This report is based on the second class. There were too many families in this class to make follow-up visits feasible. It was therefore determined to study thoroughly a small group—approximately one-fifth of all the families. A random selection was made by taking every fifth family record from the files. From the group thus selected the following were excluded for obvious reasons:

1. Families with no susceptible contacts
2. Families with an incomplete case record
3. Families in which a change of diagnosis was made
4. Children from orphanages and boarding homes
5. Families which could not be located on subsequent follow-up visits

Beginning August, 1936, follow-up visits were made to those families of the sample group in which one or more susceptible contacts had not been reported as having developed measles, to determine the accuracy of history of previous measles and the number of cases which had not been reported.* After eliminating all families which could not be located on this visit, there remained a group of families no member of which had received prophylaxis, who serve as a sample of the larger untreated group.

Families in this sample group which were thoroughly investigated were shown not to differ materially from the larger group when compared with respect to: (1) age of the primary case ($p. = .35$), (2) age distribution of susceptible contacts ($p. = .13$) and (3) the proportion of susceptible contacts in each age group reported as developing measles ($p. = .72$).

FACTORS CONSIDERED IN THIS STUDY

There are many factors which might affect the secondary attack rate among exposed susceptibles. Many are related to the nature of the infectious agent, in this instance probably a filtrable virus, and are outside the scope of this investigation. Certain aspects relating to the host and his environment are considered in the following questions which might have a bearing on the secondary attack rate:

A. Does the age or sex of the primary case affect the number of secondary cases developing among susceptible contacts?

B. What influence do age and sex of the susceptible contact exert on the secondary attack rate?

C. What is the relationship of the period in the seasonal cycle to the secondary attack rate?

D. What is the relationship of the number of primary cases per family to the secondary attack rate?

E. What variation of secondary attack rates is occasioned by exposure of susceptible contacts to repeated exposure to a constant intensity and differing intensities of exposure at one time?

DEFINITIONS

Before attempting an answer to the questions proposed certain terms are defined according to their use in this study.

* A visit was deemed unnecessary to families in which all susceptible contacts were reported as having contracted measles.

TABLE I

Attack Rates Among Susceptible Contacts According to Age and Sex of Primary Case

Age of Primary Case	*Sex of Primary Case*	*Number Contacts*	*Number Secondary Cases*	*Attack Rate*
Under 1	M.	5	2	(40.0)
	F.	7	4	(57.1)
1–4	M.	104	77	74.0
	F.	140	101	72.1
5–9	M.	633	551	87.0
	F.	679	602	88.7
10–14	M.	18	14	77.8
	F.	30	20	66.7
15+	M.	12	7	58.3
	F.	5	2	(40.0)
All ages	M.	772	651	84.3
	F.	861	729	84.7
	M. & F.	1,633	1,380	84.6

Primary Case—The first case in a family presumably resulting from extra-familial exposure over 30 days after any previous case. Subsequent cases, the rash of which occurred within 6 days of the rash of the first case, were also called primary cases. Rash dates were used in determining the 6 day interval.

One-primary Family *—A family in which one primary case occurred.

Multiple-primary Family—A family in which 2 or more primary cases occurred.

Susceptible Contact—Any child under 10 years of age reported as not having had measles previously who was exposed to a case of measles within the family. Susceptible contacts were limited to ages under 10 because children above the 6th grade were allowed to go to school and were not recorded as contacts.

Secondary Case—A case of measles developing more than 6 days after the onset of the 1st case in the family. The study included both reported secondary cases and those determined by subsequent investigation.

Exposure Period—An arbitrary period during which effective contact could have taken place. The number of days a measles case was infectious was arbitrarily placed at 8 days. This was arrived at as follows: 1 day before the prodromes plus 4 days of prodromes plus 3 days of rash.

Person-days of Exposure—The total number of days a contact was exposed. This was reckoned as follows: One person exposed to 1 case was considered as 8 person-days of exposure; 1 person exposed to 2 cases was considered as 16 person-days of exposure, whether exposure was simultaneous or in sequence.

Month—The month refers to the date of onset.

ANALYSIS AND DISCUSSION OF FACTORS

Age and Sex of Primary Case—Among 1,253 one-primary families, 1,380 secondary cases occurred with 651 attributable to male primary cases and 729 to female primary cases (Table I). The attack rate for contacts exposed to males is 84.3 and to females, 84.7.

The effect of age of the primary case on the secondary attack rate is shown in Table II. There are too few contacts under 1 and over 14 years of age to warrant consideration. Primary cases 5 to 9 years of age had the greatest number of contacts exposed of all primary age groups considered, with a total of 1,312 or 80.3 per cent of all contacts; furthermore, the contacts exposed to this age group had the highest attack rate in each contact age group.

* Unless otherwise noted, data relate to susceptible contacts in one-primary families.

TABLE II

Attack Rates Among Susceptible Contacts According to Age of Primary Case and Age of Contact

Age of Primary Case	Age of Contact: Under 1 — No. Contacts	No. Cases	Attack Rates	1–4 — No. Contacts	No. Cases	Attack Rates	5–9 — No. Contacts	No. Cases	Attack Rates	0–9 — No. Contacts	No. Cases	Attack Rates
Under 1	0	0	(—)	9	3	(33.3)	3	3	(100.0)	12	6	50.0
1– 4	51	20	39.2	119	105	88.2	74	53	71.6	244	178	73.0
5– 9	110	56	50.9	826	778	94.2	376	319	84.8	1,312	1,153	87.9
10–14	2	1	(50.0)	18	13	72.2	28	20	71.4	48	34	70.8
15+	2	1	(50.0)	11	6	54.5	4	2	(50.0)	17	9	52.9
All ages	165	78	47.3	983	905	92.1	485	397	81.9	1,633	1,380	84.6

The primary age group, 1 to 4, in comparison, had but 244 contacts, 14.9 per cent of the total. The attack rates for the respective primary age groups vary somewhat when considered for each age group of contacts but the differences do not appear to be highly significant (p. = .1).

Age and Sex of the Contact—Of 1,633 susceptible contacts in one-primary families 786 were males and 847 were females (Table III). The respective attack rates were 84.4 and 84.7. Differences in attack rates between sexes are slight for each age group of contacts.

Of all contact age groups that of 1 to 4 contains 983 individuals or 60.2 per cent of the total (Table II). For each age band of primary cases, the contact age group, 1 to 4, shows a greater number of susceptibles exposed, except for the primary case group, 10 to 14, with a higher attack rate in each instance. When all three of the contact age groups are compared, the attack rates vary considerably and are significantly different (p. = .0000). When the contact age groups, 1 to 4, and 5 to 9, are compared, the difference is not very significant for a sample of this size. The attack rate in children under 1 year, however, is significantly lower than the attack rates in the older children.

Apparently, neither the sex of the primary case nor that of the susceptible contact influences the secondary attack rate. The age of the primary case has not been shown to influence very sig-

TABLE III

Attack Rates Among Susceptible Contacts by Age and Sex of Contact

Age of Contact	Sex of Contact	Number Contacts	Number Cases	Attack Rates
Under 1	M.	77	32	41.6
	F.	88	46	52.3
1– 4	M.	472	441	93.4
	F.	511	464	90.8
5– 9	M.	237	190	80.2
	F.	248	207	83.5
0– 9	M.	786	663	84.4
	F.	847	717	84.7
	M. & F.	1,633	1,380	84.6

nificantly the secondary attack rate, though the 5 to 9 primary age group gave the highest secondary attack rates. A significantly lower attack rate was found among susceptible contacts under 1 year of age.

Relationship of the Period in the Seasonal Cycle to the Secondary Attack Rate—The number of susceptible contacts by month appears in Table IV.

TABLE IV

Attack Rates Among Susceptible Contacts by Age and Month

Month	Number Contacts	Number Cases	Attack Rates
January	38	33	86.8
February	136	120	88.2
March	589	511	86.8
April	620	532	85.8
May	196	156	79.6
June	45	26	57.8
July	6	...	(0.0)
August	...	...	(...)
September	3	2	(66.7)
Totals	1,633	1,380	84.6

Early in the epidemic cycle, namely, during January and February, there were fewer contacts than noted for the immediate succeeding months, but the attack rate was as high in these as during March, April, and May. The attack rate for the individual months varies but slightly although toward the end of the epidemic cycle, in May and June, there is a relative but not highly significant decrease (p. = .15). Such differences as exist might be explained by infection of the more highly susceptible children earlier in the epidemic year.

Relationship of the Number of Primary Cases per Family to the Secondary Attack Rate—It is conceivable that more than one primary case in a family might increase the attack rate among susceptible contacts in the family. In Table V, data are presented showing the attack rates among susceptible contacts exposed in families with 1, 2, and 3 primary cases. In one family with 5 primary cases there was 1 susceptible contact, but measles did not develop. The number of contacts exposed in three-primary families is too small to consider but they are included to give the complete picture. When the data for one- and two-primary families are examined, it will be noted that with one exception, the age group, 1 to 4, the attack rates are higher in one-primary families than in the two-primary families. The variation is so slight, however, that it is not of much consequence. The number of contacts in the

TABLE V

Attack Rates Among Susceptible Contacts According to Number of Primary Cases in the Family

	Number of Primary Cases in Family *								
	1			2			3		
Age of Contact	Number Contacts	Number Cases	Attack Rates	Number Contacts	Number Cases	Attack Rates	Number Contacts	Number Cases	Attack Rates
Under 1	165	78	47.3	24	9	37.5	4	1	(25.0)
1	178	164	92.1	12	10	83.3	4	3	(75.0)
2	246	225	91.5	10	8	80.0	1	1	(100.0)
3	304	284	93.4	22	22	100.0	2	2	(100.0)
4	255	232	91.0	23	22	95.7	1	1	(100.0)
	983	905	92.1	67	62	92.5	8	7	
5	207	180	87.0	18	17	89.5	1	0	(0.0)
6	107	89	83.2	4	2	(50.0)	0	0	(.....)
7	75	60	80.0	8	5	(62.5)	2	2	(100.0)
8	56	44	78.6	2	1	(50.0)	0	0	(.....)
9	40	24	60.0	4	3	(75.0)	1	1	(100.0)
	485	397	89.1	36	28	77.8	4	3	
0–9	1,633	1,380	84.6	127	99	78.0	16	11	68.8

* In the 1 five-primary family there was one susceptible contact—measles did not develop.

TABLE VI

Attack Rates Among Susceptible Contacts Exposed to One-Primary Cases by Number of Exposure Periods, Person-Days of Exposure, and Age of Contact

		Age of Susceptible Contact											
		Under 1			1–4			5–9			0–9		
Number Exposure Periods	Person-Days of Exposure	Number Contacts	Number Cases	Attack Rates	Number Contacts	Number Cases	Attack Rates	Number Contacts	Number Cases	Attack Rates	Number Contacts	Number Cases	Attack Rates
1	8	125	74	60.2	937	877	93.6	457	385	84.2	1,517	1,336	88.1
2	16	32	3	9.4	35	22	62.9	21	8	38.1	88	33	37.5
3	24	0	0	(....)	1	0	(0.0)	0	0	(....)	1	0	(0.0)

two-primary families is small and larger totals might alter the result. However, it is remarkable that the attack rates for two-primary families is not notably higher than for one-primary families. It might appear unusual that exposure of susceptibles to 2 primaries should result in attack rates of the same or lower magnitude than encountered for similar age groups among one-primary families—on second thought, however, a plausible explanation appears. The attack rates for individual ages from 1 to 9 years, inclusive, vary between 60 and 93 per cent. If an attack rate of 85 per cent is taken as the mean for all ages considered, the hazard of exposure to additional primaries could possibly affect only 15 per cent of susceptible contacts. Thus, secondary attack rates in multiple primary families could not be much larger than for one-primary families. Again, it is possible that the remainder in multiple-primary families might be more resistant on account of selection—some of the subsequent primary cases being, in fact, secondary cases.

The Effect on Secondary Attack Rates Occasioned by Repeated Exposure to a Constant Intensity—A measles case was considered to be infectious for 8 days—arrived at as noted in the definition of "exposure period" given above. In Table VI, susceptible contacts are classified by age, exposure periods, and person-days of exposure. The majority of contacts had one exposure. Very few contacts remain who were exposed for two periods, and but one contact was exposed for three periods. In the one-exposure group, the secondary attack rate for all contacts exposed is 88.1. For contacts exposed twice, a period of 16 days, the attack rate was 37.5. Evidently the few contacts who escape measles after one exposure have a decidedly smaller probability of contracting measles when exposed a second time but the additional hazard is still real. Whether part of the decreased risk at second exposure is due to sub-clinical infection with development of temporary immunity resulting from first exposure, is conjectural. It is possible, in the light of Panum's observations, that a considerable number of contacts who do not contract the disease on second exposure may have given an incorrect reply when questioned regarding an attack of measles in the past. Again, the highly susceptible may have been eliminated by the one-period exposure which would tend to make the attack rate lower in the two-period group.

The Effect on Secondary Attack Rates Occasioned by One Exposure to Various Intensities—The effect on the secondary attack rate of exposure to multiple primary cases is considered above and leads to further investigation

TABLE VII

Attack Rates Among Contacts by Number of Primary Cases, Person-Days of Exposure, and Age of Contact

Number of Primaries	Person-Days of Exposure	Age of Susceptible Contact: Under 1 — Number Contacts	Under 1 — Number Cases	Under 1 — Attack Rates	1–4 — Number Contacts	1–4 — Number Cases	1–4 — Attack Rates	5–9 — Number Contacts	5–9 — Number Cases	5–9 — Attack Rates	0–9 — Number Contacts	0–9 — Number Cases	0–9 — Attack Rates
1	Under 8	...	..	(....)	5	3	(60.0)	3	2	(66.7)	8	5	(62.5)
	8	123	74	60.2	937	877	93.6	457	385	84.2	1,517	1,336	88.1
	16	32	3	9.4	35	22	62.9	21	8	38.1	88	33	37.5
	17+	10	1	10.0	6	3	(50.0)	4	2	(50.0)	20	6	30.0
2	Under 16	..	..	(....)	2	2	(100.0)	3	3	(100.0)	5	5	(100.0)
	16	21	9	42.9	63	58	92.1	31	25	80.6	115	92	80.0
	17+	3	..	(0.0)	2	2	(100.0)	2	..	(0.0)	7	2	(28.6)
3	24	2	1	(50.0)	8	7	(87.5)	4	3	(75.0)	14	11	78.6
	25+	2	..	(0.0)	..	..	(....)	..	..	(....)	2	..	(0.0)
5	40	..	..	(...)	..	..	(....)	1	..	(0.0)	1	..	(0.0)
Totals		193	88	45.6	1,058	974	92.1	526	428	81.4	1,777	1,490	83.8

of the possible effect of intensity of exposure (Table VII). An exposure period of less than 8 days is possible if the primary case was removed to hospital during the 8 day period. Therefore, in families in which there was 1 primary case, susceptible contacts may have been exposed for less than 8 days, for 8 days, or if exposed to additional members of the family as they developed measles, for more than 8 days. Each additional exposure to another measles case in the family was considered as an additional 8 days of exposure. Thus, a child in a one-primary family may have been exposed for 16 days—8 days to the primary case and 8 days to another member of the family. The great majority of contacts were exposed for 8 days. The few remaining contacts are principally in the 16 person-days of exposure group. Table VI is almost a duplicate of that part of Table VII which deals with contacts to one-primary cases; the differences are the result in Table VI of exclusion of contacts exposed to more than 1 additional familial case in 1 exposure period.

When two-primary families are considered, the majority of contacts were exposed for 16 days, that is, exposed to 2 primary cases but to no subsequent secondary cases. No comment is warranted for contacts to families with 3 primaries, for their number is too small.

To determine adequately the effect of intensity of exposure in the same period of time, the attack rates resulting from exposure for an 8 day period in one-primary families, a 16 day period in two-primary families, and a 24 day period in three-primary families should be compared (Table VIII). In other words, a comparison is being made between contacts in one-primary, two-primary, and three-primary families who were not subsequently exposed to a secondary case. The attack rate for contacts exposed in a family with 1 primary case is 88.1, for those exposed to 2 primary cases 80.0, and for 14 contacts exposed to 3 primary cases, 78.6. There is little difference between the secondary attack rates. A variation in intensity of exposure as measured by the number of cases in the family to which a susceptible is exposed during the same period of exposure (8 days), therefore, appears to exert no significant effect upon the secondary attack rate.

TABLE VIII

Attack Rates Among Susceptible Contacts Exposed to One-, Two-, and Three-Primary Cases During One Exposure Period

Number of Primaries	Person-Days of Exposure	Age of Susceptible Contact: Under 1 — Number Contacts	Under 1 — Number Cases	Under 1 — Attack Rates	1–4 — Number Contacts	1–4 — Number Cases	1–4 — Attack Rates	5–9 — Number Contacts	5–9 — Number Cases	5–9 — Attack Rates	0–9 — Number Contacts	0–9 — Number Cases	0–9 — Attack Rates
1	8	123	74	60.2	937	877	93.6	457	385	84.2	1,517	1,336	88.1
2	16	21	9	42.9	63	58	92.1	31	25	80.6	115	92	80.0
3	24	2	1	(50.0)	8	7	(87.5)	4	3	(75.0)	14	11	78.6
5	40	..	..	(....)	..	..	(....)	1	..	(0.0)	1	..	(0.0)

Similar considerations apply here as with Tables V and VI. It may be that on account of error in the dates given or for other reasons, some of the cases called primary were really secondary so that the multiple-primary contacts represent in part those from whom the most susceptible had been selected out by the first primary exposure. In addition, it might be that some multiple-primary families represent instances in which the entire number of contacts in the family were exposed at once, in which case the remaining susceptible contacts represent a selected, less infectable group.

Of the two factors, number of times exposed, and intensity of exposure, the former is of importance and from a practical point of view. There is a greater hazard to exposure to 2 cases separated by an 8 day interval. The bearing this has on the possible use of prophylactic agents or upon removal from the family of susceptible contacts 3 years and under is obvious.

SUMMARY

An analysis of certain factors which might affect the secondary attack rate in a random sample of families, no member of which received prophylactic therapy, in the 1935 measles epidemic in Detroit, resulted in the following conclusions:

1. The sex of the primary case or that of the susceptible contact is unimportant.
2. Age of the primary case may exert an influence on the secondary attack rate. Further investigation of this factor would appear desirable.
3. The age of the susceptible contact influences the secondary attack rate significantly.
4. Secondary attack rates are not greatly affected by the period in the seasonal cycle in which measles first appears in the family.
5. The number of primary cases per family does not affect the secondary attack rate among susceptibles in the family.
6. There is an additional hazard when a contact is exposed to measles a second time.
7. Intensity of exposure as measured by the number of cases in the family at one time does not appear to influence appreciably the secondary attack rate among susceptibles at risk.

NOTE: The author gratefully acknowledges the assistance of George F. Badger in the preparation of this paper.

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Syphilis Meeting

ASSEMBLY of Laboratory Directors and Serologists, Hot Springs National Park, Arkansas, October 21–22, 1938—A meeting under the auspices of the Committee on Evaluation of Serodiagnostic Tests for Syphilis, of the U. S. Public Health Service, with Surgeon General Thomas Parran, Chairman, is scheduled for October 21 and 22, 1938, at Hot Springs National Park, Ark.

The aims and purposes of the assembly will be to consider means and methods to improve and to make more generally available the serologic tests, which are so important in syphilis control work. Tentative arrangements call for the presentation of the program in four sections.

The first section will consider the need for adherence to conventional technic in the routine performance of reliable serodiagnostic tests. Need for training of laboratory personnel will be the subject of the second section. The third section will discuss the prosecution of the studies to evaluate the performance of serologic tests within the states. The fourth section will consider the desirability of licensing or approving, for the performance of serodiagnostic tests for syphilis, laboratories within the states by the respective state departments of health.

A separate committee will draft recommendations for each of the four sections for presentation to the assembly. The respective chairmen of these 4 section meetings will be Drs. Walter M. Simpson, Dayton, Ohio, Arthur H. Sanford, Rochester, Minn., F. E. Senear, Chicago, Ill., and H. H. Hazen, Washington, D. C.

Out of the meeting should come a crystallization of opinion with regard to the important problems which will be considered. Those interested in obtaining further information should write to the Surgeon General, U. S. Public Health Service, Washington, D. C.

Nutritional Education in the Home

Dutchess County (N. Y.) Project*

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AN immense mass of evidence of the necessity for effective education of the public in the field of nutrition has accumulated in recent years. This was presented by the President of this Association at its last Annual Meeting as one of several outstanding health needs of the nation.

Decision as to the best methods of administrative approach to the problem offers many difficulties. Research has indicated that the formerly highly vaunted method of attempting to discover by physical examination those who are in need of nutritional education is of limited value, as there is no practicable procedure available for detecting in this manner much more than cases of gross malnutrition. Such cases are comparatively uncommon in most parts of this country.

On the other hand, the optimum diet recommended by authorities in the field of nutrition is far from being realized among a considerable part of the population. It is no doubt true that such a diet has been approximated among the better informed. The increased physical development noted among students entering college, as compared with that of the previous generation, is probably a reflection of the great spread of knowledge in this field during the present century.

One principle of economics which has somehow stuck in my mind since college days is "the law of diminishing returns." This law seems already to have begun to operate in certain branches of the public health field. For instance, diphtheria has been practically eliminated in areas where effective measures have been taken to immunize the younger children, but a much greater effort proportionately is required to bring the percentage of immunizations to the vicinity of 100, while the returns, namely the reduction of diphtheria morbidity, are practically nil above, say, the 50 per cent point.

Similarly the question may well be raised as to whether the same law is not operating already in the field of nutritional education. Are health authorities justified in further large expenditures for group demonstrations and newspaper publicity for this purpose? Have not the large bulk of those who intelligently read the papers, attend group meetings, and the like, already been well instructed as to a proper diet? Is it not to be expected that the further expansion of activities along these lines will very soon reach a point where comparatively small returns, in the form of better nutrition, will result?

* Read at a Joint Session of the Child Hygiene, Food and Nutrition, and Public Health Nursing Sections of the American Public Health Association at the Sixty-sixth Annual Meeting in New York, N. Y., October 8, 1937.

Whatever may be the answer to these provocative questions, few, I think, will disagree with the proposition that the greatest lack in nutrition is found among the underprivileged groups of the population, and, further, that these groups respond poorly to educational measures along the lines mentioned. In order to reach this group effectively, individual instruction of the mother in the home must be brought about. The public health nurse is logically the agent who should be depended upon for this work. She is the one who has already attained a standing among such mothers in matters relating to health. She knows appropriate methods of approach to secure action. She is already today's real health educator in the homes of the very people who most need better nutrition.

For the nurse to do effective work in this field, she must not only be instructed in the principles of nutrition, but she also needs a plan of operation under which she can gauge the lacks in the dietaries of the families with whom she works and take measures toward their correction.

This does not mean that she must be a full-fledged nutritionist. Really, all she needs to know about diet is what every intelligent mother can be expected to learn, with some additional information as to methods of dealing with the food customs of the various nationalities represented in the nurse's district. It is therefore desirable that the nurse be instructed in the basic principles of nutrition by one who is competent in this field, and that she may obtain advice from time to time on special problems that may arise in the course of her work.

A project in nutritional education has been in operation under the writer's direction in Dutchess County, N. Y., beginning in December, 1933, when the services of about 40 work relief nurses were obtained from the Civil Works Administration. The project was further extended, though only in February and March, 1934, by the employment, through the CWA, of a nutritionist, Mary K. Swint, and 29 women workers whom she instucted and supervised. Only one of this group was a nurse.

The nurses in the other group engaged in this project have varied in number, and have been employed under various governmental auspices (TERA, CWA, WPA) as a part of a state-wide nursing project, under which bedside nursing was provided to patients on relief or in poor circumstances, and assistance was given in other public health nursing activities. The Dutchess County nutrition project was carried on by the nurses when their full time was not required for these activities.

Valuable voluntary assistance was rendered in the instruction of the nurses by Grace Thompson, chief dietician of Vassar Brothers Hospital, and by Ruth Wheeler, Ph.D., Professor of Physiology, Vassar College. The textbook *Food in Health and Disease,* by Catherine Mitchell Thoma was used by Miss Swint as a basis for an intensive course of instruction, lasting about a week. The workers were also taught economical ways of purchasing food, and were given some idea of proper methods of psychological approach in home visiting.

Each worker was supplied with literature on nutrition which was given out in families where it was felt that it would be profitably used. The workers were also instructed to provide the housewife with sufficient explanation in connection with each piece of literature.

In addition to general instructions as to nutritional requirements the housewives were given individual demonstrations in food preparation where it was felt necessary. For instance, they were shown how to use salmon in the form of a loaf or salad. Frequently a problem was found as to the proper use of

milk, especially in those families receiving public relief, where a supply of evaporated milk was often furnished but the housewives had insufficient knowledge in its proper use. Another form of demonstration was that of desirable methods of vegetable preparation, which are very commonly not understood. Sometimes it was, of course, necessary to make return visits in order to see that the instructions were effective.

The workers were able to be of some assistance to families on relief who complained of difficulties with their grocery orders. The worker would discuss the orders with the housewife and, if the latter so desired, would accompany her to the grocery and help her in choosing her supplies. In some instances the worker made out sample menus for the week with housewives, especially if they complained that insufficient food was received from the welfare agency. By this method it was often possible to demonstrate that with a little planning the weekly grocery order would provide sufficient food for the family.

Investigation forms, prepared with the assistance of Professor Wheeler, were used by all the workers, who were furnished with detailed stencilled instructions as to the method of filling them out. Each form provides spaces for recording the estimated weekly use of various kinds of foods during a year previous to the first visit and during a year subsequently, together with data regarding the composition of the household, family income, etc.

These forms for summarizing the use of foods are believed to have been of distinct advantage. Without some such form it is hardly possible to get an adequate idea of the nutritional habits of the family. They also probably aid to some extent in impressing upon the mothers' minds the importance of the work. After the form has been filled out it serves as a talking point on which to base suggestions for dietary changes. On the other hand, I hold no brief for the specific form used. A considerable part of it was prepared for special purposes which would not apply to usual routine work. Forms of the future will no doubt be much simpler.

The data as yet have been analyzed only from the standpoint of increases or decreases in the use of milk, cod liver oil, foods rich in iron, and fruits or vegetables (exclusive of potatoes), as related to place of residence, increase or decrease in income, number of children and relief status. A quantitative estimate of the sufficiency of the dietary has not been made, both because time and personnel were insufficient, and because it is doubtful that the recollection of the housewife was accurate enough for this method to be of great significance, except possibly for such items as milk and cod liver oil. (See Note.)

NOTE: For those who are interested in the technical aspects of the subject, it is desirable to record the methods of procedure by which changes in the nutritional status of households were determined for the purposes of this study.

Various previous studies have indicated that the principal factors in which the American dietary is deficient are calcium, vitamins C and D, the latter vitamin especially among young children, and iron. (Pellagra is practically non-existent in New York State, as in most sections of the country, hence consideration of dietary improvement to combat this disease was not necessary in this project.)

The chief objective in the project therefore was improvement of the dietaries in these respects. Likewise the analysis of the record forms was made on the same basis, an estimate being made of increases or decreases in foods rich in these factors; this estimate was made in each instance under four categories: M (milk and cheese—for calcium); C (cod liver oil—for vitamin D); F (foods rich in iron); V (fruits and vegetables, exclusive of potatoes, for vitamin C).

As some items of food in each of the fore-

Nearly all the families covered in this project were on relief during some or all of the 2 year period, or received very small incomes. For 423 families the data were sufficiently complete for analysis—272 in the city of Poughkeepsie, 34 in the city of Beacon, and 117 in the rest of the county, the latter being largely in the villages and hamlets, as the workers were unable to cover remote rural sections because of lack of facilities for transportation. The analysis indicated that the dietary was improved during the year following instruction in 68 per cent of the households; it was found to be approximately the same in 15 per cent, and impaired in 17 per cent, the impairment, as might be expected, being most marked among families with decreased incomes. It is of interest, however, that even among the 93 families whose incomes declined in the second year, the analysis indicated that the selection of foods improved in 53 per cent. Among those in which the income was increased (205 families), and in which it was approximately the same (125 families), the comparable figures were 71 per cent and 75 per cent, respectively. The cost of living was somewhat higher the second year, so that families with

NOTE (continued)

going categories except C might show an increase while others showed a decrease, a system of approximate equivalents was devised for estimating the relative values of the changes, based, in each category, on the approximate content of the food items in the special food factor for which the category was established. The following equivalents were used:

Category M

1 qt. fresh milk; 1 large can evaporated milk, ¼ lb. cheese (except cream cheese).

Category F

1 lb. beef; ¼ lb. liver; ⅓ lb. dried beans; 1 can baked beans; 1 lb. mutton; 1 lb. pork (except bacon and salt pork); 3 lb. bacon; 1 lb. spinach (greens); 1 lb. dried prunes; 1 lb. ham.

Category V

1 lb. or ⅓ head cabbage; 1 lb. or 2 heads lettuce; 1 lb. greens; 1 lb. (or can) tomatoes; 1 lb. or 3 oranges; 2 lb. or 6 apples; 2 lb. (or bunches) carrots; 2 lb. (or bunches) beets; 1 can tomato juice; 2 cans pineapple juice; 1½ cans grapefruit juice; 1½ lb. grapefruit; 2 lb. (or cans) other fruits and vegetables (except potatoes).

A clerical worker was instructed in the use of these equivalents until it was found that she was proficient in determining as to whether there was an increase or decrease in each of the categories under consideration and in marking the forms accordingly, *e.g.*: "M+ *F*+ C+ V+." Changes of less than 10 per cent were considered as indicating no increase or decrease, in view of the fact that the estimates were subject to a margin of error, even though averaging several food items tended to narrow the margin. It is recognized that the approximations are especially wide in reference to fruit and vegetables, as adequate quantitative tables on the vitamin C content of foods are not yet considered to be available. On the other hand, all forms not found by the clerical assistant to show increases or decreases in all four categories, were appraised by the writer. It is of interest that this appraisal seldom indicated a need of altering the clerical assistant's estimate as to the change in the nutritional status of the household. In general, under the system of estimates outlined above, the nutrition status was considered to be improved or impaired, if increase or decrease, respectively, was indicated in three or four of the categories, or in one or two of the categories when no increase or decrease was indicated in the remaining ones. Occasionally the change in nutrition status was otherwise classified, for example, the status was held to be improved in households where there was a large increase in milk consumption together with small estimated decreases in the use of fruits and vegetables and of foods rich in iron.

It is believed that a similar system could be inaugurated by many health agencies without the necessity of any great increase in personnel. In educational field work of this character it is of course impossible to obtain anything like the exactness in estimating results which can be maintained in laboratory work.

The writer will be glad to furnish copies of the record forms and the instructions as to their use upon receipt of a written request.

income unchanged throughout the 2 years to all intents and purposes suffered a reduced income.

Higher percentages in improvement were found among households in which there were children, than among childless households—70 per cent in those with 1 to 3 children, and 65 per cent in those with 4 or more children, as compared with 60 per cent among the childless. As there were only 29 households without children, however, this observed difference, while of interest, is hardly of statistical significance.

The recorded improvement varied considerably according to locality, the cities faring better than the smaller places; the percentages with improvement being 73 per cent in Poughkeepsie, 65 per cent in Beacon, and 57 per cent in the rest of the county. These differences may be due, to some extent, to variation in the inherent characteristics of the respective populations, but probably also reflect the fact that the nurses in the cities could find more time to devote to the work than those in other places. Also, in the city of Poughkeepsie the nurses worked under somewhat closer supervision.

Some of the more cynical among my hearers may wonder why no investigation was made of a control group, namely, families in which such educational work had not been carried on. To such questioners it is well to confess that the possibility was considered, but it was not put into effect because, in the first place, the selection of a control group is subject to more than usual difficulties in work of this sort, and in the second place, it would probably be impossible to select a suitable group whose members would not also be influenced by the educational work done among the other group, though at second-hand, that is, as the result of social intercourse between the two groups.

Neither was it deemed feasible, nor even desirable, that an attempt should be made by physical examinations and clinical tests to discover whether a reported improvement in diet was accompanied by a corresponding improvement in physical condition. Such examinations and clinical tests are not yet simple and inexpensive enough, nor conclusive enough, to be recommended for large-scale work. Suffice it to say that what the human race needs is an adequate, well balanced diet, and that whatever is instrumental toward this end has its own justification. It is not necessary to strive for perfection, for the perfect diet is not yet known, nor is the perfect physical examination.

Nearly all of the nurses, as well as the lay women, employed in this work, had had no previous experience in the public health field. It is of course possible, and even likely, that fully trained and experienced public health nurses could have obtained a higher percentage of improvement. On the other hand, I can recall no instance in which trained public health nurses in any comparable area have been able within a single year to persuade nearly such a high proportion of mothers to adopt an even simpler procedure, namely the immunization of their preschool children against diphtheria. It must be remembered that dietary improvement involves changing the habits and tastes of a lifetime and altering customs handed down from generation to generation.

The method outlined does not involve the necessity of creating a large body of additional workers, as it can be readily integrated with the usual program of generalized public health nursing. All that is needed is a reasonable amount of basic knowledge in nutrition, which many of the nurses have already, and an additional record form for their family folders, which many will no doubt welcome!

Indiana's Dental Health Program*

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IN the organization of the Bureau of Maternal and Child Health program of the Indiana State Board of Health, dentistry has been given its rightful place. It must be understood that the program in no way can be considered as an entering wedge into state dentistry. The dental program in Indiana is a means of educating the people to the needs for dental attention, and caring for the dental needs of children whose parents are unable to provide the dental care necessary to the health of their children.

This dental health program has been made possible through funds made available to the Bureau of Maternal and Child Health by the Children's Bureau of the U. S. Department of Labor, which have been used in carrying out both the educational and demonstration services.

The Indiana State Dental Association is composed largely of dentists who see much farther than the mere mechanics of dentistry; who are aware of the great need for dental education, as well as for dental care for the children of Indiana; and who know that if we desire a better health record for the state, for children and adults as well, inspection and care must be given to the oral cavities of children and adults.

The preliminary plans for Indiana's dental program were first formulated by the State Health Commissioner, the Director of the Bureau of Maternal and Child Health, and the Advisory Committee of the Indiana State Dental Association. Through this coöperation, and with the technical advice of the late Colonel C. T. Messner, Senior Dental Surgeon of the U. S. Public Health Service, a plan was outlined and submitted to the Trustees of the Indiana State Dental Association in May, 1936. This met with the enthusiastic and unanimous approval of the Trustees of the Dental Association.

The dental health program as inaugurated in Indiana consists of three branches: Organization, Demonstration, and Education.

ORGANIZATION

Believing that the most effective end-results of health work are gained when all health agencies coöperate and follow the same road, a concentrated effort has been put forth to secure the coöperation of the dental societies, county medical societies, and lay organizations interested in public health such as Parent-Teacher Association, the tuberculosis association, the American Red Cross, the American Legion, the service clubs, and other groups. Close coöperation with the Bureau of Public Health Nurs-

* Read before the Child Hygiene Section of the American Public Health Association at the Sixty-sixth Annual Meeting in New York, N. Y., October 5, 1937.

ing of the State Board of Health has been maintained. The part of the trained county public health nurse is important in any dental program. The nurse is of greatest assistance in making the initial contact in her work in the public schools, and can be depended upon to find those patients needing dental care, and to send the patients first to a private dentist or the dental unit.

In order to administer the plan, a technical staff was appointed, which consists of a dental health educator, a dental operator to work in the mobile unit, and a technical adviser.

DEMONSTRATION

The demonstration branch consists of a mobile dental unit—a complete dental office on wheels. Demonstration work according to the interpretation of the U. S. Children's Bureau, and the Indiana Plan, means actual work performed on patients. The mobile dental unit has all the physical adjuncts necessary to render efficient dental services. It contains a dental chair, and instrument cabinets with instruments of the latest design, an adequate laboratory, supply and linen cabinets, a sterilizer, and modern lighting equipment. This mobile unit was patterned after the one used in the Indian Reservations and the Coast Guard Service of the U. S. Public Health Service. A dental operator has been placed in charge of the work in the unit, and he does not use an assistant.

In order to select the initial demonstration area in which to locate the dental unit, the statistics of the various counties were studied to assist in determining not only the field which would be presented for demonstration, but also the financial conditions of the citizens. At this time a careful study was made of the reports of the Indiana Bureau of Vital Statistics, the Indiana State Planning Board, and the report of the Dental Survey of School Children, U. S. Public Health Service *Publication No. 226,* from which it was found that in Greene and Owen Counties, during the years 1926 to 1933, inclusive, 6,458 children had been born. Considering the deaths and removals occurring during this time, it was approximated that there were 6,000 children in these two counties between the ages of 3 and 10 years. Therefore, in order to limit the program so as to make a proper demonstration, only those children between 3 and 10 years of age, of indigent parents, were eligible for service.

The next point was to study the financial income of those people, which would be such as to render them unable to pay for private dental service for their children. Here again the information was utilized in selecting Greene and Owen Counties as the first demonstration area. Such statistics as the agricultural income per square mile, manufactured products per capita, total assessed property per capita; percentage of population on relief rolls; and the number gainfully occupied persons receiving an income of less than $1,000 per annum were used.

The next problem was to secure the coöperation and support of the local dentists of the proposed demonstration area. It was learned that the dentists of the selected area had an outstanding record in that every dentist practising in that area was a member of the local component society, the Indiana State Dental Association, and the American Dental Association. With this type of active organized dentists, the plan, as well as the approval of the plan by the Indiana State Dental Association in May, 1936, was placed before them for their approval. Complete support and coöperation have continued since the establishment of the demonstration service.

With the completion of the preliminary organization plans and the purchase of equipment, the unit was put into operation. According to the plan as adopted by the Advisory Committee of the Indiana State Dental Association, patients eligible to receive the benefits of dental care in the unit are those children between the ages of 3 and 10 years, whose parents are financially unable to provide for the dental care necessary. The services consist of amalgam and cement restorations, prophylaxis, and extractions.

The dental plan in Indiana establishes 3 sources from which assignment of patients to the unit can be made. A patient may be admitted to the unit for treatment upon the recommendation of the county public health nurse, since the unit will not be assigned to any county not having such a nurse, and, inasmuch as it is felt that no person is better acquainted with the people of the county and the manner in which they live than the county health nurse. Second, the local relief agency present in every county and township is permitted to refer any patients who are carried on their relief rolls. The local dentist, over his own signature, is permitted to send patients to this clinic. Thus, through these agencies, careful check is kept on patients in order that there may be no patients admitted who are not entitled to the free services.

Recommendation by the referring agencies does not mean that the patient can be taken into the clinic without further formality. Before any work can be performed on the child, the parent or guardian is requested to sign a written request for such service. It is understood that it is not a permit to work on the child, but a request from the patient that the work be done. After all of these preliminary procedures have been completed, the patient is accepted for actual dental work.

EDUCATIONAL WORK

This part of the program is under the supervision of Dr. Mary H. Westfall, the Dental Health Educator of the Bureau of Maternal and Child Health. One of the most far reaching educational devices used is the distribution of free literature to persons requesting it. The bureau to date has not prepared any literature, but, believing that the various pamphlets published by the American Dental Association adequately present the public health problems, has purchased pamphlets from them for distribution. Three publications are obtained from the Good Teeth Council for Children, Inc., Chicago.

The mobile dental unit is considered as part educational in its functions. Before the unit is sent into a community, the people are instructed in dental health matters by means of speakers before Parent-Teacher Associations, at service club meetings, etc. When the oral examinations are made in the schools in an effort to locate indigent children needing dental care, the children, of course, relay the information to their parents, and in the end the entire community becomes dental health minded. There is no point in attempting to teach any phase of public health education through the children only; this information must be presented to the parents if best results are to be obtained.

In coöperation with the Good Teeth Council for Children, Inc., we have conducted various visual educational projects in the schools in the form of puppet shows, magic shows, and nature study programs. During the past school year these programs reached 70,000 school children in the public and parochial schools and were most effective. Another form of dental education was the distribution weekly of mimic broadcast sheets to the school teachers. These stories are in the form of travel-

ogues; are printed copies of actual radio broadcasts by George Wood Clapp, D.D.S., of New York, over some eastern stations; and they can easily be integrated with projects in health, physical education, English, composition, reading, spelling, history, art, etc. The material is particularly suitable for grades 5 to 9, inclusive. There is no expense to the schools for this material, being furnished through the courtesy of the Bureau of Maternal and Child Health, the Indiana State Dental Association, and Dr. Clapp. These broadcasts are approved by the American Dental Association—the highest authority in the dental profession. This year a state-wide dental poster contest is being conducted in the public schools of Indiana, sponsored by the Indiana State Board of Health and the Indiana State Dental Association.

Being convinced that the rôle of the county public health nurse is of utmost importance in any type of health program for the public, Indiana last year conducted the first of a series of concentrated dental nursing courses. The courses were conducted at Indiana University School of Dentistry. In all, 60 nurses attended the two courses offered, and many favorable comments were made by them to the effect that they were greatly helped in making general oral health examinations of the school children. The importance of diet and nutrition was also stressed in these courses. During the coming year we plan to repeat these courses, having perhaps three courses during the school year.

In order that teachers in the public schools may be more competent in disseminating the proper dental health information to the children, during the months of July and August the Bureau of Maternal and Child Health, coöperating with the Speakers' Bureau of the Indiana State Dental Association, and the State Department of Public Instruction, conducted a series of dental health lectures in 4 different teachers' training colleges in the state. These courses likewise met with the enthusiastic approval of the school authorities, with requests being made that similar courses be offered next year.

SUMMARY

The organization and administration and educational programs of the Indiana dental program as carried out by the Indiana State Board of Health has been presented. It is planned to proceed with this program slowly, and to improve it with each year's experience. To date the mobile dental unit has located in only the original demonstration area, namely, Owen and Greene Counties. The people in this section are in dire financial circumstances and there is much work to be done there. In most cases the toothbrushes provided the children coming to the dental unit, are the first ones which they have ever had.

The Indiana State Board of Health believes in education and more education; in teaching the parents that poor health is a handicap in any life's work; and that prevention is easier and often shorter—and certainly much cheaper—than cure. Another aim is to teach the children that teeth are vital parts of the body and should be so considered and cared for.

In considering this program, one has visions of placing more dental units in the state in caring for those children whom we have and always will have—those who cannot care for themselves. It has been interesting to note the satisfactory coöperation from the dentists, the schools, and the public at large throughout the state. The dentists inform us that, without doubt, in those communities in which the dental unit has been located the general public has become more "dental health minded," that more children who can pay for

dental care are going to their private dentists for this care.

It is the aim of the State Board of Health to develop this demonstration so that in the future perhaps one county or several counties grouping together can appropriate local funds for furnishing original equipment which may carry forth a program of their own, patterned after the one which has been demonstrated by the State Health Department. This is in the future, and perhaps it is a long way off. It is certain that Indiana's dental program will be carried along in close coöperation with the American Dental Association, the Indiana State Dental Association and its component societies. The Indiana State Board of Health feels that these are the men who know best the needs and defects of their own communities, and should be the persons to advise us in carrying forth the future dental health program.

Plumbing in Low Cost Housing*

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IN view of the fact that drinking water which has been contaminated through faulty plumbing may spread disease, it is a public responsibility to assure that plumbing in all buildings is safe. It is just as important in low-cost housing as in any other, especially in view of the economic status of the occupants, and their sometimes inadequate nutrition, and lower resistance to disease.

Even in dwellings of the lowest cost, it is necessary to have adequate facilities for safe drinking water, cleanliness, and for removal of human excreta. It is believed that there is general agreement on a minimum for each family unit, of a kitchen sink and a bathroom containing one water-closet, one bathtub, and one lavatory. The bathroom should be accessible without going through a bedroom.

The fixtures should meet a few simple requirements. They should be provided with a safe supply of water. They should be proof against siphonage of fixture contents into the water supply system. They should be connected to a sewer leading to some adequate means of sewage disposal. They should be impervious and easily cleaned. Except the toilet bowl, all the fixtures should be supplied with hot and cold water through a mixing faucet for controlling the temperature. They should be properly trapped and vented. Pipes should not be larger or more costly than necessary, either in first cost or maintenance. The water should be from a safe, preferably public, supply. No auxiliary water supply should come into the building.

How is siphonage of fixture contents to be avoided? By removing the chief cause, which is the presence of submerged inlets to fixtures.

For example, a bathtub may be filled to a level where the inlet is submerged beneath the water surface. Then, if a sufficient decrease in pressure occurs in the water supply pipes, as may easily happen from a number of causes, the tub may function like an elevated storage tank and supply water to fixtures at lower elevations.

The ordinary flush tank for a water-closet is a fixture where the inlet is nearly always submerged, because the hush tube on the ball cock usually extends almost to the bottom of the tank.

A water-closet equipped with a flush valve is another example of a submerged inlet fixture.

If the inlet to every fixture is brought well above the rim, siphonage will not occur. Suggested minimum distances for the inlet above the rim are 1″ for lavatories, 1½″ for sinks, and 2″ for tubs.[1]

Where a fixture is covered, such as a flush tank, it is customary to place the inlet below the rim. Progressive plumb-

* Read at a Special Session of the American Public Health Association at the Sixty-sixth Annual Meeting in New York, N. Y., October 8, 1937.

ing manufacturers make open fixtures almost entirely with over-rim supplies. They should now give careful study to the development of a satisfactory flush tank from which siphonage cannot take place.

Suggestions for improvement are (a) to eliminate the submerged hush tube and devise some other method of quieting the entrance of the water, (b) to place the water pipe, fittings and valve entirely above the highest possible level of the water surface in the tank, (c) to increase the effectiveness of the overflow pipe, (d) to provide means for maintaining atmospheric pressure above the water surface, without drawing air through the water-closet, in case a vacuum in the water pipe withdraws the air, and (e) to elevate the bottom of all tanks above the rim of the toilet. In some instances, certain of these improvements have already been made.

A tank constructed along these lines is to be preferred over one which has no protection against siphonage or one which depends upon some mechanical device of questionable reliability to prevent the return of water from tank to pipe. On new construction, nothing less than a definite air gap between water inlet and fixture rim should be approved by those who are charged with the responsibility of construction, whether for low cost housing or any other type of building.

In the correction of existing submerged inlets, one is often confronted by the additional expense of rebuilding or redecorating defaced walls, to secure an air gap. This usually greatly increases the difficulty of securing the changes. To avoid such extra expenses, various methods have been devised. For example, a "goose-neck" pipe may be attached to the submerged inlet of a built-in tub, thus raising it above rim. As long as no leaks develop in the portion of the pipe below the rim, this is satisfactory.

Mechanical vacuum breakers are widely advertised for protection of flush valves on toilets. Obviously, a mechanical device which is subject to deterioration, liming up, sticking of moving parts, noise, maladjustment, corrosion, leakage, or variation in manufacture is vulnerable to criticism. On the other hand, in existing buildings it may be possible to secure a considerable degree of protection by permitting, without definitely approving, the installation by competent plumbers working under careful inspection, of a combination of a non-return stop and a suitable vacuum breaker, where undue delay or even complete failure to achieve improvements might result from rigid insistence upon an air gap. Such installations must be made under strict limitations. Not all vacuum breakers are suitable.

Failure of water pressure is more likely to occur on upper floors than on lower ones. Therefore, in correcting existing submerged inlets, the work might well start at the top of the building and progress downward, until the entire plumbing system has been safeguarded.

In low-cost houses, the use of soil stacks 3″ in diameter will usually be possible and desirable. Stacks of this size permit economies in construction of walls and partitions, as well as in the plumbing.

A code prepared by the late Professor George C. Whipple and associates,[2] states that a 3″ soil stack could take care of as many as 8 bathrooms of the type here considered, each containing one water-closet, one tub, and one lavatory. Thus, if 2 bathrooms adjoin on a floor, one stack of this size could serve a 4 story tier of bathrooms. Four kitchen sinks, one above the other, would require only a 1½″ waste stack under this code. Thus, for low-cost buildings, 4 stories or less in height, 4″ partitions would suffice even where they must contain soil and waste stacks.

In apartment buildings for low-wage earners, the tenants expect to use a common laundry. Such facilities are quite likely to be placed in the basement. Floor drains in such locations will be kept sealed well enough by the water which inevitably spills on the floor, without the use of special devices to maintain the seal.

The possibility of flooding basements with sewage during storms should not be overlooked. If sewers are likely to be overloaded, some automatic device should be installed to keep the basement dry. Overloading is likely to occur in slum clearance projects where the sewers are old and in poor repair, and where large, densely populated, low-cost developments replace small, old buildings.

If the flooding of sewers is not prolonged, it may be sufficient to use an automatic back-water valve on the house drain, with the rain water downspouts connected between this valve and the street sewer. These valves may be either hydraulically or electrically operated, and controlled by floats or electrodes.

If flooding of street sewers is prolonged, the discharge from fixtures in the building itself may cause sewage to back up into the basement while the back-water valve is closed. In such a case, it is best to build more adequate sewers. Failing in that, the next best thing is to have basement fixtures drain to a sump equipped with an automatic sewage pump or ejector. Hydraulic ejectors are dangerous for use because of the likelihood of direct cross-connections between the drinking water system and the sewer. Electrically driven pumps or ejectors operated by compressed air are to be preferred.

Special thought should be given to maintenance costs of house drains. While extra heavy cast iron pipe costs more at first, it is less likely to give trouble and involve future expenses.

If refrigeration is furnished from a central ice plant, the problem may arise as to the re-use of the condenser water. Water which has been used for any purpose in a building should not thereafter be used for drinking purposes. One should guard against the possibility that the condenser may drain directly to the sewer, constituting a dangerous cross-connection and inviting outbreaks of water-borne diseases.

Economies may be made, under certain favorable conditions, in venting soil and waste pipes by the use of circuit or loop vents. One should make sure, however, that the loop vent will perform its function.

The code [2] above mentioned states: "A branch soil or waste pipe to which two and not more than eight water-closets, pedestal urinals, trap standard slop sinks, or shower stalls are connected in the series may be vented by a circuit or loop vent, which shall be taken off in front of the last fixture connection." Whether any money can be saved by loop venting is largely dependent upon the individual arrangement of fixtures.

An item sometimes overlooked is the possibility of sewer pipes passing over uncovered water tanks or places where ice, beverages, or foods are stored, handled, or prepared. Although the pipes may be tight when first installed and inspected, they eventually corrode and leak, leading to contamination of water, ice, or food below.

Plumbing codes, generally speaking, need to be brought up to date, both to protect public health and to permit uses and materials which will give better and more lasting plumbing.

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Housing and Health*

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WHAT is the connection between housing and public health? What is the importance of better housing in the United States today? How does the housing problem fit into the general sociological and economic situation? For these things are the health officer's concern once he attempts to deal with this problem.

I like to think of housing as the home environment of the person, and health as a state of physical, mental, and social efficiency. The intimate relation of these things is obvious. And this committee, in framing hygienic standards for housing, is also thinking in these broad terms.

We know that the population living under adverse housing conditions is to an extent a selected population, is subject to much chronic ill health, and is handicapped by all the concomitants of low income. In a recent paper, DallaValle [1] discusses several of the factors which are related to sickness and death rates in slum areas, namely, decreased opportunities for self improvement, poor housing, malnutrition, lack of medical care, and exposure to unhealthful occupations. Hence, it must be recognized that the observed excess in illness and mortality rates in slum areas cannot be blamed entirely, perhaps not even chiefly, on the housing [2]; nor can we today evaluate precisely the part that housing itself plays. However, it is not the only health problem of the low income groups and, although they would surely be entitled to decent housing even if health were not involved, there is certainly every justification for an active participation in the housing field by health authorities.[3] It is only necessary to list the essentials of a healthful home environment to show the close connection: a pure and sufficient supply of water, sanitary sewage disposal, sufficient ventilation, heat, and light, space enough for ordinary family demands, absence of excessive dampness, screening against flies and mosquitoes, freedom from fire and other risks of accidents, adequate playgrounds and sunshine for children. In essence, the committee will deal with all those factors in the home environment which affect physical, mental, or social efficiency.

The varying nature of the housing problem in metropolitan areas, in other large cities, in towns, in rural areas, in different parts of the country, makes any adequate summary of the housing situation today quite impossible in a brief discussion. The urban Real Property Inventory of the Department of

* Read at a Special Session of the American Public Health Association at the Sixty-sixth Annual Meeting in New York, N. Y., October 8, 1937.

Commerce brings this out very strikingly.[4] For instance, the percentage of dwelling units with more than one person per room was 40 in Charleston, S. C., and 7 in Portland, Ore. The percentage of units with no private toilets was 49 in Charleston and 2 in Burlington, Vt. Many other housing factors showed wide variations. Although no single, typical picture can be presented, some idea of the situation can be gained from the percentages for the median city for each of several distributions. The survey covered all homes in 64 medium sized and small cities, there being at least one city represented in each state.

Seventeen per cent of dwelling units had more than one person per room.
Eight per cent had no running water.
Nineteen per cent had no inside private toilets.
Twenty-six per cent had no privately used bathtub or shower.
Six per cent were without electricity or gas for lighting.
The median age of the dwellings was from 20 to 25 years.
Thirty-two per cent were multiple.
Seven per cent were vacant at the time of the survey (1934).
Seven per cent had extra families from choice or necessity.

As to rural housing, interesting parallel data are available from the survey of the Bureau of Home Economics of the Department of Agriculture, 1933–1934.[5] The figures I am using are for the median state in each distribution.

Ninety per cent of dwellings had no inside flush toilets.
Seventy-seven per cent were without a piped-in water supply.
Eighty-five per cent were without bathtubs.
Fourteen per cent were 50 years of age or older.

The data on housing obtained in the National Health Inventory of the Public Health Service (1935–1936) have not been completely analyzed, but what are available form a valuable supplement to the preceding figures. For all cities surveyed 16 per cent of the households were found to have more than 1 person per room, 6 per cent more than 1½ persons per room, and nearly 4 per cent 2 or more persons per room. This index of crowding is used as the only one available, but with a realization of its ambiguity.

It is interesting that the size of the city, *per se*, did not seem to make much difference in the index, the small places showing as much congestion, on the average, as the large.

However, as in the Real Property Inventory, there was wide variation from city to city. At one extreme lies a city with 40 per cent of the families having more than 1 person per room; at the other extreme lies a city with less than 3 per cent of its families in this category. Part of the spread is due to varying proportions of the colored population in different cities; but even for white families, the differences were very marked, about one-third of the cities showing percentages of 20 or more over 1 person per room, and another third with percentages under 10. Equally wide variations are found for the more severe degrees of congestion.

As I said, color was an important factor associated with overcrowding. For the colored families in the southern cities surveyed, 37 per cent had more than 1 person per room, against 20 for the white; 21 per cent had more than 1½ persons per room, against 8 for the white; 16 per cent had 2 or more persons per room, against 6 for the white. In northern cities there was a similar contrast.

Congestion, as measured by this index, was greatest in the South (even for the white families) and lowest on the west coast.

In the income group under $1,000, which constituted nearly 40 per cent of

the white persons surveyed, 21 per cent of such households showed more than 1 person per room, 8 per cent more than 1½, 5 per cent 2 or more. What can happen in an emergency is well indicated by the degree of overcrowding in the relief population during 1935. For white families, 32 per cent had more than 1 person per room, 14 per cent more than 1½, 8 per cent 2 or more. In the southern cities, congestion was marked in relief families, the figures being 50, 29, and 22, respectively for the white households, and 52, 34, and 27 for the colored.

This statistical description is admittedly inadequate, especially in showing the extent to which housing standards recommended by this committee are not now in general practice; but it does show the wide variations in the problem from city to city and in rural areas, the importance of the housing conditions of the Negro, the widespread existence of sub-standard housing and overcrowding, and the necessity of considering the remodelling of old houses as well as the construction of new—the importance of applying sanitary regulations to existing structures.

Comparison between housing conditions today and those of the past is very difficult. Sanitary conditions have improved, but most studies do not show much improvement in other directions. There is also an ominous note in the unemployment problem. Technological changes, the difficult position of the unskilled worker in competition with machinery, changed trade relations with the rest of the world, make it probable that unemployment will continue as a major problem under present social conditions—and point a direct need for public housing, such as may be expected to develop under the new act passed in the closing days of Congress.

To me, the failure of society appreciably to improve housing conditions in many years in this country means one thing—that health authorities must coöperate with organized labor in meeting this problem, because the persons who are going to live in the houses are the ones most directly concerned in furthering housing reform. Equally it is a challenge to organized labor to develop an increasing interest and expertness in this field.[6] The coöperative housing movement in Sweden is of particular relevancy in this connection.

The likelihood of a housing shortage still greater than that in existence now requires a word. If we define *need* as the effective economic demand for houses, we still reach estimates that are really astounding. Terborgh's[7] estimate for new dwelling units is 3,775,000 by 1941; Brookings Institution[8] 4,500,000 by the same time; Ernst Kahn's[9] 9,400,000 by 1945. All of these estimates are carefully worked out, giving consideration to many factors. Will building keep pace with that demand? We know that the number of non-farm homes constructed annually dropped from 933,000 in 1925 to 53,000 in 1934. In 1936 the figure had risen to 270,000. Terborgh believes that the average for the next 5 years is not likely to reach the 750,000 required by the above estimate and that we are therefore probably in for a period of housing deficiency perhaps parallel with the worst period after the World War. It should be emphasized that these estimates have to do solely with the economic demand, not with the social need.

The social need is perhaps best indicated by considering the economic conditions of the population in relation to the cost of housing. In the cities tabulated from the National Health Inventory data, about 40 per cent of the persons were in families receiving incomes of less than $1,000 per year and 80 per cent were in families receiving less than $2,000. This was in 1935 and

some improvement is to be expected, but with recovery also go increasing prices. What income is necessary under present conditions to provide decent housing, adequate nutrition, sufficient clothing, proper medical care, is debatable; but it is evident from these figures that a large proportion of the population of this country are not receiving adequate incomes to insure a suitable standard of living. Housing is only one symptom of this maladjustment. It must be attacked as a symptom, but not without realizing that the underlying issue is that of securing a better distribution of income, a higher relative wage scale for the working men, and greater security against the disastrous effects of depressions.

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Vol. 28

American Journal of Public Health
and THE NATION'S HEALTH

Official Monthly Publication of the American Public Health Association

Volume 28 August, 1938 Number 8

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THE AUTO TRAILER

THE ever present problem of the auto trailer is brought to the fore by the advent of summer. It is true that in a country as large as the United States some sections are concerned with the auto trailers and their inhabitants during the entire year, chiefly the South and Southwest in winter and the North and Northwest in summer, but summer is the great holiday season of the entire year.

As far as we know, no general regulations have been adopted, though some states and some cities have passed laws and ordinances. We are not the only people worried by this new type of migrant. The auto trailer had its origin in Detroit, the great home of the automobile, but has spread to neighboring countries. The Provinces of Canada have found it necessary to adopt regulations. Those of Manitoba [1] passed in 1937 are said to be the basis of those adopted in other parts of Canada. The trailer is known in that country as "auto trailer house" and defined as a "vehicle towed or drawn by an automobile or other means constructed and equipped for the occupation and comfort of persons while traveling from one destination to another."

The great danger from such vehicles is due to the excreta of the inhabitants. Consequently the regulations require that the closets shall be of the removable receptacle type, fly-proof, with proper ventilation and constructed so as to permit proper cleansing and disinfection. The receptacles must be of substantial water-tight metal construction. Sinks and other fixtures used in washing or bathing must also be provided with water-tight metal containers. The use of closets, sinks, wash basins or other fixtures which may permit the discharge of liquid or solid wastes to the ground are strictly prohibited.

The tourist camps, summer resorts, or other locations where trailers are allowed to park shall be adequately provided for the sanitary disposal of all wastes by burial or burning. The use of a common collecting receptacle for the disposal of excreta or other wastes is prohibited. When parked in any city or town where plumbing fixtures and water supplies are provided, the use of the ordinary closets and other such fixtures in trailers is strictly prohibited. Under

no circumstances shall an auto trailer be used as a permanent or occasional place of residence in any city, town, or municipality.

In addition to the regulations mentioned, all trailers and their occupants shall be subject to the provisions and regulations respecting disease control under the Public Health Act.

In England [2] the health authorities have considerable anxiety over what are known as caravans and caravan encampments. These temporary or movable structures are dumped on sites for use during the summer season and there they remain. Recent decisions as to the liability of such temporary dwellings have placed them clearly under the regulations of the Public Health Act, and they are liable to be dealt with as statutory nuisances as to overcrowding to the prejudice of the health of inmates or if so lacking in proper sanitary accommodations as to give rise to a nuisance prejudicial to health. The Minister of Health is empowered to exempt any camping association which attempts to control its members and to keep the camp site in good sanitary condition. Indeed, so far from bearing down upon the well behaved camper, properly equipped holiday camps and camping sites are fostered in that country.

Some years ago a visiting Englishman described America as a nation on wheels. As we recall it, his impressions were gained from seeing the ordinary automobile. Since that time the number of auto trailers has grown by leaps and bounds and they constitute a real menace to public health along the routes they follow and in the communities where they stop for a longer or shorter time.

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WHAT WE OWE TO THE FOREFATHERS

A SHORT time ago we called attention to the mistake of binding one's self too much by authority, and quoted from the wisdom of Oliver Wendell Holmes as well as others on the subject. Another danger has been pointed out most strikingly by Osler,[1] who says: "Of the altruistic instincts veneration is not the most highly developed at the present day, but I hold strongly with the statement that it is the sign of a dry age when the great men of the past are held in light esteem."

We are too apt to forget what we owe to the fathers and should always welcome such reminders. Nothing is more irritating than to hear young men speak lightly of the old doctors. It is no doubt true that with the wonderful discoveries made in many fields and the perfection of diagnostic methods through accurate apparatus, the end results are perhaps in the great majority of cases better than the fathers obtained, but it is a question as to whether or not we are producing as good men as they were. One must view with awe and admiration the country doctors; in America, for example, Drake, born in abject poverty and reared in a log cabin, McDowell, Marion Sims, and Crawford W. Long—to go no further. Abroad, we need only mention as a country doctor, Jenner, who has a sure place in the Hall of Fame; Bright, who boiled the urine of nephritics in a spoon, yet who formulated such a clear clinical and pathological conception of nephritis that little was left for later investigators except amplification;

Bretonneau, who differentiated affections of the throat and stated definitely his doctrine of the specificity of diseases in general and "diphthérite" in particular; and many others who had nothing which we would consider a laboratory today, yet, by their wonderful exactness of observation and well trained powers, unraveled problems in a fashion which has not been bettered even to the present. Among these men we find instances of real originality, though it must be borne in mind that the majority of what we consider great discoveries are really the placing of the capital on the column. The most striking example of this, perhaps, is Harvey's discovery of the circulation of the blood. He himself, thoroughly versed in literature, apparently recognized that it was a great contribution to others in the same field, and though he gave the proof which has withstood the test of time, he had to suppose the capillary circulation, and it remained for Malpighi to demonstrate how the blood made its way from the arteries to the veins. Harvey was all of his life an anatomist, and distrusted authority. He said,[2] ". . . because I profess both to learn and to teach anatomy not from books but from dissections, not from the positions of philosophers, but from the fabric of nature."

Medical history is full of rediscoveries of things which have been taught and then forgotten. There are many instances in which "the restatement of an important theory or teaching is almost as significant as its original presentation."[3] The truth of this emphasizes the necessity of reading the best works of the fathers. "The more one reads the better medical works of past generations, the more astonished one becomes, and the more humble, too, at what has been known and written and then forgotten."[3] Vaughan said: "In my opinion, the present-day medical man, including the epidemiologist, is not as fully conversant as he should be with the history of epidemic diseases. As an illustration I may cite the fact that it took us many months to learn facts about the epidemiology of cerebrospinal meningitis that were demonstrated conclusively by French army surgeons in the first half of the nineteenth century."[4] ". . . Is cerebrospinal meningitis a rural disease? Certainly every important contribution to its symptomatology, epidemiology, and pathology, found in American medical literature during the time mentioned comes from a country doctor."[5]

This emphasizes the great service which certain writers are giving to the medical world in the reproduction of masterpieces from the past (see Note). Very few of us have the command of languages, to say nothing more, to read these articles in the original. Osler said: "There is a third class of men in the profession to whom books are dearer than to teachers or practitioners—a small, a silent band, but in reality the leaven of the whole lump. The profane call them bibliomaniacs, and in truth they are at times irresponsible and do not always know the difference between meum and tuum. . . . We need more men of this class, particularly in this country, where every one carries in his pocket the tape-measure of utility. Along two lines their work is valuable. By the historical method alone can many problems in medicine be approached profitably."[6]

At the amazing mass of marvelous revelations which are coming to us through research in practically every field of science, the majority of us can only look and wonder. Few there are in any one branch of science capable of selecting the best material and interpreting it for the average man. This is perhaps especially true in regard to medicine. If for no other reason we need the historian, especially the one who is also a bibliomaniac.

NOTE: *Classic Descriptions of Disease,* by Ralph H. Major; *Selected Readings in Pathology,* by Esmond R. Long; *Selected Readings in the History of Physiology,* by John F. Fulton.

REFERENCES

1. Osler. *The Functions of a State Faculty* (Society), 1897.
2. Harvey. Exercitatio anatomica de motu cordis et sanguinis in animalibus.
3. White, Paul D. Doctors and Books. *New Eng. J. of Med.,* Feb. 24, 1938, p. 338.
4. Vaughan. *Epidemiology and Public Health,* Vol. I, p. 9.
5. Vaughan. *Epidemiology and Public Health,* Vol. I, p. 548.
6. Osler. Aequanimitas and Other Addresses, "Books and Men," p. 222.

LETTER TO THE EDITOR

TO THE EDITOR:

My attention has been called to two errors in the 1937 Report of the Committee on Water Supply of the Public Health Engineering Section which should be corrected. This report was published in the 1937–1938 *Annual Year Book* of the Association, pages 137–156 inclusive, Supplement to *American Journal of Public Health,* Volume 28, No. 2 (February), 1938.

In the first column, page 145, in a list of 14 states reporting no water-borne outbreaks "during the last 7 years," Mississippi should be deleted and Louisiana substituted.

On page 155, first column, under the sub-title "Outbreaks in Cities Having Filtration Plants," the information submitted to the Committee with regard to the Ft. Wayne, Ind., outbreak of April–Sept., 1934, does not justify the statement . . . "it appears probable that . . . a situation developed similar to the one which caused the explosive outbreak of gastroenteritis in Detroit in 1926, when the quantity of chlorine applied to the filtered water was not sufficient to satisfy the chlorine demand and also permit proper disinfection during a period when a highly polluted raw water was being treated."

The Bureau of Sanitary Engineering of the Indiana State Board of Health from which the committee obtained information concerning this outbreak reports "our investigation showed conclusively, that the water filtration plant was not responsible for this outbreak."

In the statistical tables given in this report, the Ft. Wayne outbreak of 1934 was properly listed under classification H-3 "Cause of Outbreak Undetermined."

As chairman of the committee which submitted this report, I sincerely regret these errors and request that the above statement of correction be published at an early date in the *American Journal of Public Health.*

For the information of all who read the original report or reprints of it, the committee desires again to emphasize that this report does not deal *only* with water-borne outbreaks involving public water supplies, but with *all* water-borne outbreaks which came to the committee's attention where five or more persons were known to have been ill.

Very truly yours,

ARTHUR E. GORMAN,
Chairman,
Committee on Water Supply (1937)
Public Health Engineering Section
American Public Health Association

June 22, 1938.

PRELIMINARY PROGRAM OF THE SIXTY-SEVENTH ANNUAL MEETING AMERICAN PUBLIC HEALTH ASSOCIATION

KANSAS CITY, MO., OCTOBER 25–28, 1938

THE Annual Meeting Program Committee presents the Preliminary Program of the scientific sessions of the Sixty-seventh Annual Meeting of the American Public Health Association and information concerning meetings of related organizations.

This program is incomplete and perhaps inaccurate in some respects. The affiliations of speakers have been omitted, but will be published in full in the Final Program. Delegates are urged to consult the Final Program, available at the Registration Desk in the Auditorium at the time of the meeting.

Tuesday, 9:30 A.M.

LABORATORY

First Session—Room 500, Auditorium

Address of the Chairman. FRIEND LEE MICKLE, SC.D.

Report of the Coördinating Committee on Standard Methods. *Chairman,* LIEUTENANT COLONEL A. PARKER HITCHENS, M.D.

Report of the Standard Methods Committee on Examination of Water and Sewage. *Chairman,* JOHN F. NORTON, PH.D.

Report of the Standard Methods Committee on Examination of Dairy and Food Products. *Chairman,* ROBERT S. BREED, PH.D.

Report of the Standard Methods Committee on Diagnostic Procedures and Reagents. *Chairman,* WILLIAM D. STOVALL, M.D.

Report of the Standard Methods Committee on the Biology of the Laboratory Animal. *Chairman,* LIEUTENANT COLONEL RAYMOND A. KELSER, PH.D., D.V.M.

Report of the Standard Methods Committee on Analyzing Frozen Desserts. *Chairman,* FRIEND LEE MICKLE, SC.D.

Report of the Committee on Biological Products. *Chairman,* ELLIOTT S. ROBINSON, M.D., PH.D.

Report from the Section Archivist. AUGUSTUS B. WADSWORTH, M.D.

Reports of Representatives of Committees Outside of the Laboratory Section and Other Special Reports.

Section Business.

Tuesday, 9:30 A.M.

HEALTH OFFICERS

First Session—Room 600, Auditorium

The Interests and Problems of the Health Officers' Section. GREGOIRE F. AMYOT, M.D., D.P.H.

Opportunities Under the Federal Housing Acts. C.-E. A. WINSLOW, DR. P.H.

An Analysis of Tenures of Office of Health Officers. JOSEPH W. MOUNTIN, M.D., and ELLIOTT H. PENNELL.

The Objectives of Health Departments. GEORGE C. RUHLAND, M.D.

VITAL STATISTICS

First Session—Room 400, Auditorium

The Effectiveness of Different Systems of Collecting Vital Statistics Data. J. V. DEPORTE, PH.D.

Discussion. MRS. J. B. COLLIE and RICHARD N. WHITFIELD, M.D.

The Value of the Vital Statistics Data on Birth and Death Certificates in County Health Work. EARLE G. BROWN, M.D.

Social Security Needs for Vital Statistics Records. I. S. FALK, PH.D.

Discussion. THOMAS W. CHAMBERLAIN.

The Use of Marginal Punch Cards in Tabulating Vital Statistics Data. EVA W. RAMSEY.

System of Record Keeping in Westchester County. MARJORIE T. BELLOWS.

A Brief Review of the Expected Content of the Demography Exhibit of the New York World's Fair in 1939. HAVEN EMERSON, M.D.

FOOD AND NUTRITION

First Session—Room 501, Auditorium

Present Status of Dental Caries in Relation to Nutrition. NINA SIMMONDS, SC.D.

The Selenium Problem and Its Relationship to Public Health. IRA A. MANVILLE, M.D., PH.D.

Effect of Environmental Conditions on Incidence of Dental Caries. BION R. EAST, D.D.S.

Some Nutritional Requirements During Growth. P. C. JEANS, M.D.

Nutritional Status of Dextrose. CARL R. FELLERS, PH.D.

Antirachitic Properties of Constituents of Human Milk. (To be read by title only.) ROBERT S. HARRIS, PH.D., and JOHN W. M. BUNKER, PH.D.

Tuesday, 9:30 A.M.

CHILD HYGIENE

First Session—Music Hall, Auditorium

Illnesses Occurring Among Young Children as Revealed in a Nation-wide Survey. GEORGE ST. J. PERROTT.

Discussion.

Dental Health Program for the Child. Speaker to be announced.

Discussion.

Preventive Aspects of Orthopedic Service. Speaker to be announced.

Discussion.

Section Business.

PUBLIC HEALTH NURSING SECTION AND AMERICAN SCHOOL HEALTH ASSOCIATION

Joint Session—Little Theatre, Auditorium

Program to be announced.

EPIDEMIOLOGY

First Session—Room 401, Auditorium

Production of Mottled Enamel Halted by a Change in Common Water Supplies. H. TRENDLEY DEAN, D.D.S., and FREDERICK S. MCKAY, D.D.S.

Results of Contact Investigation in Syphilis in an Urban Community. THOMAS B. TURNER, M.D., ABRAHAM GELPERIN, M.D., and JAMES R. ENRIGHT, M.D.

Epidemiology of Leptospirosis. K. F. MEYER, M.D., PH.D.

Epidemiology of Syphilis in New York City. THEODORE ROSENTHAL, M.D., and JOSEPH WEINSTEIN, M.D., M.S.P.H.

The Syphilitic Chancre from the Point of View of the Public Health. WALTER CLARKE, M.D.

Tuesday, 12:30 P.M.

INDUSTRIAL HYGIENE

Luncheon Session—Roof Garden, Hotel Kansas Citian

DELTA OMEGA

Luncheon Session—Junior Assembly Room, Hotel President

Tuesday, 12:30 P.M.

PUBLIC HEALTH EDUCATION

Luncheon Session—Congress Room, Hotel President

Is the Health Educator Culturally Qualified to Teach? Speaker to be announced.

Tuesday, 2:30 P.M.

PUBLIC HEALTH EDUCATION

First Session—Room 401, Auditorium

BUILDING A HEALTH EDUCATION PROGRAM

The Use of Morbidity and Mortality Statistics. Speaker to be announced.

The Use of Exhibits, Posters and Charts. HOMER N. CALVER.

The Preparation and Use of Printed Materials, Newspaper Publicity, Lectures, Radio and Movies. Speaker to be announced.

Interpreting the Physician and Making Him a Part of a Health Education Program. MARY P. CONNOLLY.

How to Fit a Special Problem Like Syphilis into the Balanced Program. WILLIAM F. SNOW, M.D.

Discussion.

PUBLIC HEALTH ENGINEERING SECTION AND CONFERENCE OF STATE SANITARY ENGINEERS

Joint Session—Little Theatre, Auditorium

Presiding: WARREN J. SCOTT.

House Trailer and Trailer Camp Sanitation. (Report of the Joint Committee on Summer Camps and Roadside Places.) *Chairman,* CARL E. GREEN, C.E.

Existing Systems of Supervision and Control Over Water Supplies and Needed Improvements Thereto. (Preliminary Report of the Committee on Water Supply.) ANSELMO F. DAPPERT.

Irrigation as a Means of Disposal for Sewage Effluents. VICTOR M. EHLERS, C.E.

Discussion. BENJAMIN V. HOWE.

Venting of the Plumbing Drainage System. F. M. DAWSON, M.C.E., and A. A. KALINSKE.

Report of the Joint Committee on Plumbing. *Chairman,* JOEL I. CONNOLLY.

Procedures Recommended for Determining the Extent of Closed Shellfish Areas. (Report of the Committee on Shellfish.) *Chairman,* L. M. FISHER, C.E., D.P.H.

Tuesday, 2:30 P.M.

LABORATORY AND EPIDEMIOLOGY SECTIONS

Joint Session—Music Hall, Auditorium

Presiding: FRIEND LEE MICKLE, SC.D., and J. A. DOULL, M.D., DR.P.H.

PERTUSSIS

Essential Problems in Pertussis. HAVEN EMERSON, M.D.

A Controlled Study in Pertussis Immunization. PEARL L. KENDRICK, SC.D., and GRACE ELDERING, with Statistical Assistance of ANTHONY J. BOROWSKI, DR.P.H.

An Evaluation of Phase I H. Pertussis Vaccine in Laboratory and Clinic. J. J. MILLER, JR., M.D.

Complement Fixation Studies in Pertussis. THOMAS F. SELLERS, M.D.

Immunity Studies in Pertussis. GEORGE MCL. LAWSON, M.D., DR.P.H.

INDUSTRIAL HYGIENE

First Session—Room 400, Auditorium

SYMPOSIUM ON INDUSTRIAL HYGIENE ADMINISTRATION

Address of the Chairman of the Section: Development of Industrial Hygiene in the United States. J. J. BLOOMFIELD.

Health Maintenance in Industry. CLARENCE D. SELBY, M.D.

Discussion. WILLIAM A. SAWYER, M.D.

Industrial Hygiene Program in a State Health Department. CARL A. NAU, M.D.

Discussion. MANFRED BOWDITCH.

CHILD HYGIENE AND FOOD AND NUTRITION SECTIONS

Joint Session—Room 600, Auditorium

Presiding: D. BREESE JONES, PH.D.

Clinical Tests of Vitamin Deficiency. (Report of the Committee on Nutritional Problems.) *Chairman,* WALTER H. EDDY, PH.D.

Malnutrition: A Challenge and Opportunity. H. D. KRUSE, M.D., and FRANK G. BOUDREAU, M.D.

Training of the Public Health Nutritionist. LYDIA J. ROBERTS, PH.D.

A Comparison of Indices Used in Judging Nutritional Status of School Children. R. M. JENSS, SC.D.

Some Objectives and Results of Public Health Nutrition in Kansas. PEARL RORABAUGH, R.N.

The County Public Health Nutrition Project in Georgia. T. F. ABERCROMBIE, M.D.

The Child's Requirement for Calcium and His Ability to Utilize Calcium from Various Sources. JULIA OUTHOUSE, PH.D.

Tuesday, 2:30 P.M.

PUBLIC HEALTH NURSING

First Session—Room 501, Auditorium

MILESTONES

Milestones of the Past Fifteen Years. DOROTHY DEMING, R.N.

Milestones and Yardsticks. MICHAEL M. DAVIS, PH.D.

Program of the Future. GEORGE C. RUHLAND, M.D.

Preparation of the Nurse of the Future. LEAH M. BLAISDELL, R.N.

AMERICAN ASSOCIATION OF STATE REGISTRATION EXECUTIVES

First Session—Aztec Room, Hotel President

Reports of Committees.

Election of Officers.

Tuesday, 6:30 P.M.

AMERICAN ASSOCIATION OF STATE REGISTRATION EXECUTIVES

Dinner Session—Junior Assembly Room, Hotel President

Tuesday, 8:00 P.M.

FIRST GENERAL SESSION

Music Hall, Auditorium

Presiding: ARTHUR T. MCCORMACK, M.D., D.P.H., D.SC., LL.D., President, American Public Health Association.

Addresses of Welcome.

Address. THOMAS PARRAN, M.D., D.SC., LL.D., DR.P.H.

Address. Speaker to be announced.

Announcement of Sedgwick Memorial Medal Award.

Reception to the President and the President-elect.

Dancing—Little Theatre, Auditorium.

Wednesday, 8:00 A.M.

JOHNS HOPKINS UNIVERSITY ALUMNI

Breakfast Session—Trianon Cafe, Hotel Muehlebach

Wednesday, 8:00 A.M.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY ALUMNI

Breakfast Session—Tea Room, Hotel Muehlebach

Wednesday, 9:30 A.M.

HEALTH OFFICERS

Second Session—Music Hall, Auditorium

Developments in the New York State Tuberculosis Program. ROBERT E. PLUNKETT, M.D.

SYMPOSIUM ON VENEREAL DISEASE CONTROL

The Results of Venereal Disease Control in Toronto. GORDON BATES, M.D.

The Control of Venereal Diseases in a Southern Rural Area. L. E. BURNEY, M.D.

Blood Tests for Syphilis "Boiled Down." JOHN F. MAHONEY, M.D.

LABORATORY

Second Session—Room 500, Auditorium

Presiding: WILLIAM D. STOVALL, M.D.

DIAGNOSTIC METHODS

Modifications of Gram's Technic with a New Differential Counterstain. (a) For Direct Smear. (b) For formalin-fixed tissue. SARA A. SCUDDER.

Laboratory Diagnosis of Rabies. THOMAS F. SELLERS, M.D.

Evaluation of Technical Procedures for the Examination of Specimens for Evidence of Enteric Disease. MARION B. COLEMAN.

Further Observations of the Primary Isolation of Tubercle Bacilli by Cultural Method. A. L. MACNABB, D.V.M.

Serological Tests in the Diagnosis of Syphilis. ELIZABETH MALTANER.

LABORATORY

Third Session—Room 201, Auditorium

Comparative Study of Bacteriological Examinations of Restaurant Utensils. OTTO P. BEHRER.

Spinal Fluid Changes in Neuro-Syphilis. CARL LANGE, M.D.

A Comparative Study of the Mouse and Guinea Pig Inoculation—Methods in the Diagnosis of Rabies. S. E. SULKIN, and JOSEPH C. WILLETT, D.V.M.

Fifteen Years of the Standard Kahn Test. REUBEN L. KAHN, SC.D.

Experimental Infection of Dermacentor Andersoni Stiles with the Virus of Lymphocytic Choriomeningitis. ALBERT MILZER and HOWARD J. SHAUGHNESSY, PH.D.

Wednesday, 9:30 A.M.

PUBLIC HEALTH ENGINEERING

First Session—Room 400, Auditorium

SYMPOSIUM ON THE EXPANDING FIELD OF PUBLIC HEALTH ENGINEERING

The Projection of Public Health Engineering Service in New York State. W. H. LARKIN, C.E.

Districting New Mexico for Sanitation. PAUL S. FOX, C.E.

Engineering Service in City Departments of Health. (Report of the Committee on Municipal Public Health Engineering.) *Chairman,* SOL PINCUS, C.E.

Organization for Public Health Engineering Service in a Rural-Urban Area. WILLIAM T. INGRAM.

(*Session continued in the afternoon.*)

CHILD HYGIENE

Second Session—Room 401, Auditorium

MATERNAL AND CHILD HEALTH

Use of Birth and Death Records as a Method in Controlling Early Infant Deaths. THOMAS J. DUFFIELD.

Discussion.

Control of Rickets Among Infants Living in Large Cities. JULIUS LEVY, M.D.

Discussion.

Obstetric Service in a Rural Community. Speaker to be announced.

Discussion.

Advances Made in the Federal Program for Maternal and Child Health. MARTHA M. ELIOT, M.D.

Discussion.

AMERICAN ASSOCIATION OF STATE REGISTRATION EXECUTIVES

Second Session—Junior Assembly Room, Hotel President

Reports of Committees.

Confidentialness of Records. LEONARD V. PHELPS and FRANK MORRISON.

Wednesday, 9:30 A.M.

PUBLIC HEALTH EDUCATION

Second Session—Little Theatre, Auditorium

SYMPOSIUM ON OUTPOSTS OF RESEARCH AND NEW FACTS FOR THE HEALTH EDUCATOR

Introduction.

Why the Health Educator Should Keep Abreast of Developments in Medicine and How He May Do That. IAGO GALDSTON, M.D.

Mental Hygiene in the Past Decade. Speaker to be announced.

Advances in Our Knowledge of Nutrition. FRANKLIN C. BING, M.D.

Newer Methods of Dealing with Prevention, Detection, and Control of Pneumonia. Speaker to be announced.

Newer Research Findings for Dealing with Syphilis and Gonorrhea. WALTER CLARKE, M.D.

Discussion.

PUBLIC HEALTH NURSING

Second Session—Room 600, Auditorium

THE STATE HEALTH DEPARTMENT AND ITS RELATION TO ALL PUBLIC HEALTH NURSING WITHIN THE STATE

The State Public Health Nursing Service as Seen by a Nonofficial Agency. ALMA C. HAUPT, R.N.

The State Public Health Nursing Unit and Its Relation to the Special Services. JANE D. NICHOLSON, R.N.

The Private Public Health Nursing Agency and Its Relationship to the State Public Health Nursing Service. ALEXANDRA MATHESON, R.N.

Interrelationships—University Courses of Study and State Nursing Service. Speaker to be announced.

EPIDEMIOLOGY

Second Session—Room 501, Auditorium

Rocky Mountain Spotted Fever and Tick Survey in Iowa. CARL F. JORDAN, M.D., C.P.H.

Nosocomial Infections in an Infants' Hospital. ARTHUR P. LONG, M.D., CHARLES F. MCKHANN, M.D., and LUCILE L. CHENEY.

Paratyphoid Fever in Massachusetts. ROY F. FEEMSTER, M.D., DR.P.H.

Probable Typhoid Carrier Incidence in Mississippi. A. L. GRAY, M.D.

Discussion. F. C. FORSBECK, M.D.

Factors Influencing Nonspecific Resistance to Infection. CHARLES F. CHURCH, M.D.

Wednesday, 12:30 P.M.

FOOD AND NUTRITION

Luncheon Session—Aztec Room, Hotel President

Report of the Committee on Bioassay Methods for Vitamin D Milk. *Chairman,* HENRY T. SCOTT, PH.D.

Report of the Committee on Participation in Standard Methods. *Chairman,* FRED C. BLANCK, PH.D.

Report of the Committee on Fellowship and Membership. *Chairman,* ABRAHAM LICHTERMAN, PHAR.D.

PUBLIC HEALTH NURSING

Luncheon Session—Congress Room, Hotel President

Presiding: PHYLLIS M. DACEY, R.N.

An Engineer Looks at Public Health Nursing. ABEL WOLMAN, DR.ENG.

Section Business.

Wednesday, 2:30 P.M.

PUBLIC HEALTH ASPECTS OF MEDICAL CARE

Special Session—Music Hall, Auditorium

Program to be announced.

VITAL STATISTICS SECTION AND AMERICAN ASSOCIATION OF STATE REGISTRATION EXECUTIVES

Joint Session—Junior Assembly Room, Hotel President

The New Form of Certificate. HALBERT L. DUNN, M.D., PH.D.

Discussion. IRVA C. PLUMMER and WILLIAM R. TRACEY.

Testing Completeness and Accuracy of Registration of Births and Deaths.

(a) **Results of Experience with Different Methods of Testing Registration in Texas Under Varied Local Conditions.** W. A. DAVIS, M.D.

(b) **A Comparison of the Effectiveness of Different Methods of Testing Registration in the Same Area in Maryland.** ARTHUR W. HEDRICH, SC.D., FRANCIS D. RHOADS, and JOHN COLLINSON, M.D., DR.P.H.

Discussion. P. K. WHELPTON and JO C. ROSE.

The Coroner's Situation. S. R. GERBER, M.D.

Discussion. R. T. STIMPSON, M.D.

Wednesday, 2:30 P.M.

LABORATORY AND FOOD AND NUTRITION SECTIONS

Joint Session—Room 600, Auditorium

Presiding: FRIEND LEE MICKLE, SC.D., and FREDERICK W. FABIAN, PH.D.

SYMPOSIUM ON FROZEN DESSERTS

What Are Frozen Desserts? FREDERICK W. FABIAN, PH.D.

The Quality of Gelatin as a Stabilizer in Ice Cream. JAMES GIBBARD.

Sanitation of Products Added to Frozen Desserts. P. H. TRACY, PH.D.

Sediment Tests in Frozen Desserts. MILTON E. PARKER.

Public Health Aspects of Fruits, Nuts, Colors and Extracts. MARTIN J. PRUCHA, PH.D.

Notes on Ice Cream Analysis. A. H. ROBERTSON, PH.D.

Brief Reports of Associate Referees:
Eggs. LAWRENCE H. JAMES, PH.D.
Sugar. HARLOW H. HALL.
Dry Milk. PAUL S. PRICKETT, PH.D.
Condensed and Evaporated Milk. P. A. DOWNS, PH.D.

LABORATORY

Fourth Session—Room 500, Auditorium

Presiding: THOMAS F. SELLERS, M.D.

TYPHOID FEVER

Evaluation of Procedures for Isolation of Typhoid Bacilli in Public Health Laboratories. HERBERT E. MCDANIELS, PH.D.

Efficacy of Immunization in an Acute Water-Borne Outbreak of Typhoid Fever. CHARLES D. BOWDOIN, M.D., C.P.H.

Progress Report on Studies of: Strains of Eberthella Typhosa for the Preparation of Vaccine, Duration of Immunity, and Results of Revaccination. LIEUTENANT COLONEL GEORGE C. DUNHAM, M.D.

PUBLIC HEALTH ENGINEERING

Second Session—Room 501, Auditorium

SYMPOSIUM ON THE EXPANDING FIELD OF PUBLIC HEALTH ENGINEERING

(Continued from morning session)

Potentialities of Public Health Engineering in Relation to the Social Security Act. ROY J. MORTON.

Educational Opportunities for the Public Health Engineer and Sanitarian. HARRY E. MILLER.

Supplementary Education of Milk Inspectors. (Report of the Joint Committee on Milk Supply.) *Chairman,* WALTER VON D. TIEDEMAN, M.C.E.

The Rôle of the Public Health Engineer in Public Health Administrative Work. MURRAY P. HORWOOD, PH.D.

Discussion. ABEL WOLMAN, DR.ENG.

Wednesday, 2:30 P.M.

INDUSTRIAL HYGIENE

Second Session—Room 401, Auditorium

CONTROL OF INDUSTRIAL HAZARDS

The Safe Operation of Degreasing Tanks Employing Trichlorethylene. W. B. HARRIS, CH.E., C. B. FORD, and F. A. PATTY.

Discussion. HENRY FIELD SMYTH, M.D., DR.P.H.

Industrial Hygiene Codes. JAMES R. ALLAN.

Discussion.

The Effect on Health of Gases Produced by the Electric Arc. LEROY W. LATOWSKY.

Discussion.

Wednesday, 6:30 P.M.

VITAL STATISTICS

Anniversary Dinner—Congress Room, Hotel President

PUBLIC HEALTH ENGINEERING AND CONFERENCE OF STATE SANITARY ENGINEERS

Annual Engineers' Stag Dinner—Banquet Hall, Hotel Muehlebach

PUBLIC HEALTH EDUCATION

Dinner Session—Trianon Cafe, Hotel Muehlebach

Closed Session—For Fellows of the Section Only

Address. Speaker to be announced.

Wednesday, 8:00 P.M.

PUBLIC MEETING

Sponsored by the Local Committee, the Jackson County Health Forum, and the Jackson County Medical Society

Special Session—Music Hall, Auditorium

Presiding: EDWIN H. SCHORER, M.D., DR.P.H.

Vitamins. E. V. MCCOLLUM, PH.D.

Address. ARTHUR T. MCCORMACK, M.D., D.P.H., D.SC., LL.D., President, American Public Health Association.

Thursday, 8:00 A.M.

THE AMEROPS

Breakfast Session—Music Room, Hotel Muehlebach

Thursday, 8:00 A.M.

HARVARD UNIVERSITY ALUMNI

Breakfast Session—Trianon Cafe, Hotel Muehlebach

YALE UNIVERSITY ALUMNI

Breakfast Session—Tea Room, Hotel Muehlebach

Thursday, 9:30 A.M.

HEALTH OFFICERS AND PUBLIC HEALTH NURSING SECTIONS

Joint Session—Music Hall, Auditorium

Is the Health Officer Fulfilling His Responsibilities in Relation to the Nursing Program? GRACE ROSS, R.N.

A Critical View of Nurses and Nursing Programs. FELIX J. UNDERWOOD, M.D.

Discussion. HUNTINGTON WILLIAMS, M.D.

Administrative Policies that Interfere with Effective Public Health Procedures. MAYHEW DERRYBERRY, PH.D.

A Program of Maternal Care in a Rural County. EARL P. BOWERMAN, M.D., and W. FRANK WALKER, DR.P.H.

LABORATORY

Fifth Session—Room 201, Auditorium

Presiding: JOHN F. NORTON, PH.D.

WATER AND SEWAGE

Uses and Abuses of Biochemical Oxygen Demand. M. STARR NICHOLS, PH.D.

Symposium on Slow Lactose Fermenters. Speakers to be selected.

LABORATORY

Sixth Session—Room 401, Auditorium

Correlation of Laboratory Studies on Diphtheria Immunization Methods and Their Possible Practical Application. F. G. JONES.

Mass Immunization against Diphtheria with Sordelli's Activated Toxoid and Contact Immunization. ALBERTO P. LEON, M.D., M.P.H.

Diphtheria in Tennessee. C. B. TUCKER, M.D., C.P.H.

The Diphtheria Immunization Studies in Saginaw. V. K. VOLK, M.D., and W. E. BUNNEY, PH.D.

Subject and Speaker to be announced.

Subject and Speaker to be announced.

Thursday, 9:30 A.M.

VITAL STATISTICS

Second Session—Room 500, Auditorium

Objectives of the Section. JESSAMINE S. WHITNEY.

Report of the Committee on Accident Statistics. *Chairman,* ROBERT J. VANE.

Report of the Committee on Forms and Methods of Statistical Practice. *Chairman,* ARTHUR W. HEDRICH, SC.D.

Report of the Committee to Study Death Certification. *Chairman,* MARJORIE T. BELLOWS.

Report of the Committee on Residence Allocation. *Acting Chairman,* ELIZABETH PARKHURST.

The Vital Statistics of the Pueblo Indians. J. H. WATKINS, PH.D., S. D. ABERLE, M.D., and E. H. PITNEY.

A Time Study of Morbidity and Mortality in the United States Navy. J. M. WHEELIS, JR., M.D.

Section Business.

PUBLIC HEALTH ENGINEERING

Third Session—Room 400, Auditorium

The Measurement of Sanitary Ventilation. Part II. WILLIAM F. WELLS.

Recent Developments in Waterways Pollution Control. (Report of the Committee on Waterways Pollution.) *Chairman,* LOUIS F. WARRICK, CH.E.

The Occurrence, Pathological Aspects and Treatment of Fluoride Wastes. M. STARR NICHOLS, PH.D.

Practical Procedures and Limitations in Present-Day Smoke Abatement. HARRY B. MELLER.

Progress Report of the Committee on Industrial Sanitation. *Chairman,* CHARLES L. POOL.

FOOD AND NUTRITION

Second Session—Room 501, Auditorium

The Food Control Exhibit at the New York World's Fair, 1939. SAMUEL C. PRESCOTT, D.SC.

The Nutrition Exhibit at the New York World's Fair, 1939. WALTER H. EDDY, PH.D.

Symposium on Public Health Problems in Packing Meat and Shellfish. Speakers to be announced.

Thursday, 9:30 A.M.

CHILD HYGIENE SECTION AND AMERICAN SCHOOL HEALTH ASSOCIATION

Joint Session—Little Theatre, Auditorium

SYMPOSIUM ON NEXT STEPS IN SCHOOL HEALTH SERVICES

Program to be announced.

EPIDEMIOLOGY

Third Session—Room 600, Auditorium

Results Obtained in the Program of Tuberculin Testing of Persons Residing in Congested Areas of a Large City. BRUCE H. DOUGLAS, M.D., and GAIUS E. HARMON, M.D.

Epidemiology of Epidemic Encephalitis in California. HARLIN L. WYNNS, M.D., and CARL J. HAWLEY, M.D.

Preliminary Observations on the Epidemiology of Mental Disease in the Eastern Health District, Baltimore. ALLEN W. FREEMAN, M.D.

Pneumonia Control Program in Pennsylvania. EDITH MACBRIDE-DEXTER, M.D.

The Incidence of Vincent's Infection in the School Children in Kansas. L. R. KRAMER, D.D.S.

Thursday, 12:15 P.M.

AMERICAN SCHOOL HEALTH ASSOCIATION

Luncheon Session—Junior Assembly Room, Hotel President

COMMITTEE LUNCHEONS

Committee on Membership and Fellowship.
Committee on Meetings and Publications.
Committee on Professional Education.
Committee on Methods and Materials in Health Education.
Committee on School Health Service Practice.

Thursday, 12:30 P.M.

PROFESSIONAL EDUCATION

Special Luncheon—Congress Room, Hotel President

Address. EDWARD S. GODFREY, JR., M.D.

Address. PEARL MCIVER, R.N.

Thursday, 2:00 P.M.

AMERICAN SCHOOL HEALTH ASSOCIATION

General Session—Room 501, Auditorium

Thursday, 2:30 P.M.

AMERICAN ASSOCIATION OF STATE REGISTRATION EXECUTIVES

Third Session—Aztec Room, Hotel President

Reports of Committees.

International Coöperation in Vital Statistics. WILLIAM R. TRACEY.

Inauguration of Officers.

Thursday, 7:00 P.M.

SECOND GENERAL SESSION

Banquet—Arena, Auditorium

Presiding: ARTHUR T. MCCORMACK, M.D., D.P.H., D.Sc., LL.D., President, American Public Health Association.

Address of the President-elect. ABEL WOLMAN, DR.ENG.

Presentation of Forty Year Membership Certificate.

Announcement of Health Conservation Contest Awards.

Friday, 8:15 A.M.

AMERICAN SCHOOL HEALTH ASSOCIATION

Breakfast Session—Tea Room. Hotel Muehlebach

Governing Council Meeting.

Friday, 9:30 A.M.

HEALTH OFFICERS

Third Session—Little Theatre, Auditorium

A Health Department Birth Control Program. J. W. ROY NORTON, M.D., M.P.H.

SYMPOSIUM ON BUSINESS METHODS OF HEALTH DEPARTMENTS

The Essentials of Budgeting. WALTER N. KIRKMAN.

Cost Accounting. A. J. MESSIER.

Discussion. CLIFFORD C. SHORO and HENRY F. VAUGHAN, DR.P.H.

Friday, 9:30 A.M.

LABORATORY

Seventh Session—Room 201, Auditorium

Presiding: ROBERT S. BREED, PH.D.

MILK AND DAIRY PRODUCTS

Methods of Detecting Human Pathogenic Hemolytic Streptococci in Dairy Products. GEORGE J. HUCKER, PH.D.

The Place of the Methylene Blue Reduction and Resazurin Tests in a Milk Control Program. CYRIL K. JOHNS.

Mold Mycelium Fragments in Butter as an Index of the Quality of the Cream from Which the Butter Was Made. E. H. PARFITT, PH.D.

The New (Seventh Edition) Report on Standard Methods for the Examination of Dairy Products. ROBERT S. BREED, PH.D.

LABORATORY

Eighth Session—Room 501, Auditorium

Presiding: ELLIOTT S. ROBINSON, M.D., PH.D.

BIOLOGICAL PRODUCTS

The Preparation of Scarlet Fever Toxin. MARY E. EVANS and RUSSELL V. GOTTSCHALL, PH.D.

A Precipitin Method for the Titration of Tetanus Toxin and Antitoxin. RAYMOND L. LIBBY AND JOHN N. ADAM, JR.

The Preparation of Pneumococcus Diagnostic Sera. HENRY WELCH, PH.D.

Antipneumococcus Serum. HAROLD W. LYALL, PH.D.

Production of Antipneumococcic Rabbit Serum. B. SCOTT FRITZ.

Pneumococcus Diagnostic Serum. ELLIOTT S. ROBINSON, M.D., PH.D.

VITAL STATISTICS

Third Session—Room 400, Auditorium

Occupational Morbidity and Mortality. ROLLO H. BRITTEN and CLARK TIBBITTS.

Discussion. ROBERT J. VANE.

Population Growth—Its Vital Statistics and Public Health Aspects. WARREN S. THOMPSON, PH.D.

Tuberculosis.

a. **A Study of Tuberculosis Mortality in Industrial Populations.** C. C. DAUER, M.D., M.P.H.

b. **A Method for Analysis of the Subsequent Course of Diagnosed Cases of Tuberculosis.** RUTH R. PUFFER.

Discussion. GAIUS E. HARMON, M.D., and HERMAN E. HILLEBOE, M.D., C.P.H.

Friday, 9:30 A.M.

INDUSTRIAL HYGIENE

Third Session—Room 401, Auditorium

Time Lost by Industrial Workers from Disabling Sickness and Accidents During the Early Days of Disability. WILLIAM MCK. GAFAFER.

Discussion. R. D. MUDD, M.D.

Asbestosis. R. R. SAYERS, M.D., and WALDEMAR C. DREESSEN, M.D.

Discussion. ANTHONY J. LANZA, M.D.

Compensation Insurance. THEODORE C. WATERS.

Discussion.

FOOD AND NUTRITION

Third Session—Room 500, Auditorium

Deterioration of Food During Distribution. (Report of the Committee on Foods.) *Chairman,* JULIAN H. TOULOUSE, PH.D.

Sanitary Condition of Containers for Retail Packages of Pasteurized Milk. J. RAYMOND SANBORN, PH.D.

Report on Procedures for Use in Investigating Food Poisoning Outbreaks. (Report of the Committee on Microbiological Examination of Foods.) *Chairman,* FRED W. TANNER, PH.D. (To be read by OSCAR B. WILLIAMS, PH.D.)

Status of Methods for the Microbiological Examination of Foods. FRED W. TANNER, PH.D.

Health Problems in Packaging Shellfish and Crustaceans. J. T. R. NICKERSON, PH.D.

CHILD HYGIENE AND PUBLIC HEALTH NURSING SECTIONS

Joint Session—Music Hall, Auditorium

Some Observations upon the Experience of the Victorian Order of Nurses for Canada with Cases of Pregnancy as Reflected by Case Records. J. T. PHAIR, M.B., D.P.H.

Newer Concepts and Procedures in Maternal Care. Speaker to be announced.

The Application of Public Health Nursing Procedures to the Newer Concepts of Maternal Care. ANNA R. MOORE, R.N.

Care of the Premature Baby. Speaker to be announced.

Friday, 9:30 A.M.

PUBLIC HEALTH EDUCATION

Third Session—Room 600, Auditorium

THE PART THE VOLUNTARY AGENCIES SHOULD PLAY IN ASSISTING OFFICIAL LOCAL, STATE DEPARTMENTS OF HEALTH, AND THE MEDICAL PROFESSION IN THE CONTROL OF DISEASE AND THE CONSERVATION OF HEALTH—PARTICULARLY THROUGH HEALTH EDUCATION ACTIVITIES

Is the Local Private Health Agency on the Way Out? BLEECKER MARQUETTE.

Is There a Place for the National Voluntary Health Agency, in View of the New Public Health Activities of the Federal Government? Speaker to be announced.

The Doctor Looks at the Voluntary Health Agency. PAUL A. TESCHNER, M.D.

Discussion.

Friday, 10:00 A.M.

AMERICAN SCHOOL HEALTH ASSOCIATION

General Session—Room 203, Auditorium

Friday, 12:15 P.M.

AMERICAN SCHOOL HEALTH ASSOCIATION

Luncheon Session—Junior Assembly Room, Hotel President

Committee on Tuberculosis.

Editorial Staff.

Friday, 12:30 P.M.

PUBLIC HEALTH EDUCATION

Luncheon Session—Congress Room, Hotel President

SYMPOSIUM ON THE EDUCATIONAL AND PUBLICITY METHODS OF THE RECENT NATION-WIDE CAMPAIGN TO STAMP OUT SYPHILIS

U. S. Public Health Service. PHILIP BROUGHTON.

American Social Hygiene Association. JEAN B. PINNEY.

Friday, 2:30 P.M.

ORAL HEALTH GROUP

Special Session—Little Theatre, Auditorium

Presiding: JOHN OPPIE MCCALL, D.D.S.

Program to be announced.

LABORATORY AND EPIDEMIOLOGY SECTIONS

Joint Session—Room 501, Auditorium

Presiding: ELLIOTT S. ROBINSON, M.D., PH.D.

THE USE OF BIOLOGICAL PRODUCTS

A Comparison of Mantoux Tests Done with Old Tuberculin and with P.P.D. M. H. BROWN, M.D.

Comparison of Freshly Diluted Old Tuberculin with the Same Tuberculin in a Buffered Stabilizing Diluent. ARTHUR W. NEWITT, M.D.

A Comparison between Convalescent Serum and Scarlet Fever Antitoxin in the Treatment of Scarlet Fever. FRANKLIN H. TOP, M.D.

Futility of Skin Testing as a Means of Establishing an Epidemiological Index of Tuberculous Infection. LESLIE L. LUMSDEN, M.D., W. PALMER DEARING, M.D., and R. ALEX BROWN, M.D.

LABORATORY, PUBLIC HEALTH ENGINEERING, AND FOOD AND NUTRITION SECTIONS

Joint Session—Music Hall, Auditorium

Presiding: ROBERT S. BREED, PH.D., BERNARD E. PROCTOR, PH.D., and JOEL I. CONNOLLY.

SYMPOSIUM ON THE PHOSPHATASE TEST IN THE CONTROL OF MILK PASTEURIZATION

Status of Pasteurization of Milk and Milk Products. (Report of the Committee on Milk and Milk Products.) *Chairman,* MERRILL J. MACK. (To be read by J. A. KEENAN, M.D., PH.D.)

A Modified Field Technic for the Phosphatase Test. HARRY SCHARER.

Further Studies on the Value of Phosphatase as an Indicator of Pasteurization. F. WELLINGTON GILCREAS and W. S. DAVIS.

Comparative Study of Field and Laboratory Methods for Phosphatase Test. WALTER VON D. TIEDEMAN, M.C.E., and WADE F. ALEXANDER.

Experiences in the Use of the Phosphatase Test in the Control of Pasteurization. PAUL F. KRUEGER.

Application of the Phosphatase Test to Creamery Butter. G. W. SHADWICK, JR., and MILTON E. PARKER.

Friday, 2:30 P.M.

INDUSTRIAL HYGIENE AND PUBLIC HEALTH NURSING SECTIONS

Joint Session—Room 600, Auditorium

Practical Methods for the Control of Hygienic Exposures. C. A. COBURN.

Discussion.

Industrial Medical Department Organization. JOHN J. PRENDERGAST, M.D.

Discussion.

Industry's Challenge to the Nurse. LAVONA BABB, R.N.

Discussion.

Friday, 4:00 P.M.

AMERICAN SCHOOL HEALTH ASSOCIATION

Governing Council Meeting—Room 201, Auditorium

Election of Officers.

MEETINGS OF OTHER ORGANIZATIONS

AMERICAN ASSOCIATION OF STATE REGISTRATION EXECUTIVES

Tuesday, 2:30 P.M. Aztec Room, Hotel President. (See page 970.)

Tuesday, 6:30 P.M. Dinner. Junior Assembly Room, Hotel President.

Wednesday, 9:30 A.M. Junior Assembly Room, Hotel President. (See page 972.)

Wednesday, 2:30 P.M. Joint Session with Vital Statistics Section. Junior Assembly Room, Hotel President. (See page 974.)

Thursday, 2:30 P.M. Aztec Room, Hotel President. (See page 980.)

AMERICAN SCHOOL HEALTH ASSOCIATION

Monday, 4:00 P.M. Room 501, Auditorium.

Monday, 8:00 P.M. Trianon Cafe, Hotel Muehlebach.

Tuesday, 9:30 A.M. Joint Session with Public Health Nursing Section. Little Theatre, Auditorium. (See page 967.)

Thursday, 9:30 A.M. Joint Session with Child Hygiene Section. Little Theatre, Auditorium. (See page 979.)

Thursday 12:15 P.M. Committee Luncheons. Junior Assembly Room, Hotel President. (See page 979.)

Thursday, 2:00 P.M. Room 501, Auditorium. (See page 979.)

Friday, 8:15 A.M. Governing Council Breakfast. Tea Room, Hotel Muehlebach. (See page 980.)

Friday, 10:00 A.M. Room 203, Auditorium. (See page 983.)

Friday, 12:15 P.M. Committee on Tuberculosis, Editorial Staff Luncheon. Junior Assembly Room, Auditorium. (See page 983.)

Friday, 4:00 P.M. Room 201, Auditorium. (See page 985.)

ASSOCIATION OF WOMEN IN PUBLIC HEALTH

Sunday and Monday, October 23 and 24. Seventeenth Annual Conference, Excelsior Springs, Mo.

Monday, 6:30 P.M. Dinner. Banquet Hall, Hotel Muehlebach.

AMEROPS

Thursday, 8:00 A.M. Breakfast. Music Room, Hotel Muehlebach.

CONFERENCE OF STATE LABORATORY DIRECTORS

Monday, 9:30 A.M. Room 400, Auditorium.

Monday, 12:30 P.M. Luncheon, Aztec Room, Hotel President.

Monday, 2:30 P.M. Room 400, Auditorium.

CONFERENCE OF STATE SANITARY ENGINEERS

Monday, 9:30 A.M. Room 500, Auditorium.

Monday, 2:30 P.M. Room 500, Auditorium.

Tuesday, 2:30 P.M. Joint Session with Public Health Engineering Section. Little Theatre, Auditorium. (See page 968.)

Wednesday, 6:30 P.M. Annual Engineers' Stag Dinner. Banquet Hall, Hotel Muehlebach. (See page 976.)

DELTA OMEGA

Tuesday, 12:30 P.M. Luncheon. Junior Assembly Room, Hotel President.

HARVARD UNIVERSITY ALUMNI

Thursday, 8:00 A.M. Breakfast. Trianon Cafe, Hotel Muehlebach.

INTERNATIONAL SOCIETY OF MEDICAL HEALTH OFFICERS

Monday, 9:30 A.M. Room 401, Auditorium.

Monday, 12:30 P.M. Luncheon. Junior Assembly Room, Hotel President.

Monday, 2:30 P.M. Room 401, Auditorium.

Monday, 6:30 P.M. Dinner. Tea Room, Hotel Muehlebach.

JOHNS HOPKINS UNIVERSITY ALUMNI

Wednesday, 8:00 A.M. Breakfast. Trianon Cafe, Hotel Muehlebach.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY ALUMNI

Wednesday, 8:00 A.M. Breakfast. Tea Room, Hotel Muehlebach.

YALE UNIVERSITY ALUMNI

Thursday, 8:00 A.M. Breakfast. Tea Room, Hotel Muehlebach.

RAILROAD FARES FROM VARIOUS POINTS TO KANSAS CITY, MO.

AMERICAN PUBLIC HEALTH ASSOCIATION
OCTOBER 25–28, 1938

From	*One-way Pullman Travel*	*Round-trip for Pullman Travel*	*One-way Lower*	*One-way Upper*
Atlanta, Ga.	$27.15	$36.20 *	$6.00	$4.80
Baltimore, Md.	35.50	67.00	8.00	6.40
Boston, Mass.	44.35	82.00	9.75	7.80
Buffalo, N. Y.	29.50	52.30	6.75	5.40
Chicago, Ill.	13.78	20.70	3.00	2.40
Cincinnati, Ohio	18.71	30.70 *	4.25	3.40
Cleveland, Ohio	24.00	41.20	5.50	4.40
Dallas, Tex.	14.85	22.30	4.25	3.40
Denver, Colo.	18.96	28.45	4.25	3.40
Detroit, Mich.	22.33	37.80	5.00	4.00
Duluth, Minn.	18.94	28.45	5.50	4.40
Fort Worth, Tex.	14.85	22.30	4.25	3.40
Indianapolis, Ind.	15.80	27.45	3.75	3.00
Jacksonville, Fla.	35.17	46.90 *	8.50	6.80
Louisville, Ky.	16.86	25.30 *	4.25	3.40
Los Angeles, Calif.	52.75	75.60	13.25	10.60
Memphis, Tenn.	14.70	22.05	3.00	2.40
Milwaukee, Wis.	15.55	23.35	3.25	2.60
Minneapolis, Minn.	14.69	22.05	3.75	3.00
Nashville, Tenn.	18.47	25.20 *	5.00	4.00
New Orleans, La.	26.53	39.80	6.00	4.80
New York, N. Y.	40.10	75.20	9.00	7.20
Omaha, Nebr.	5.97	9.00	2.50	2.00
Philadelphia, Pa.	37.40	69.80	8.50	6.80
Pittsburgh, Pa.	26.90	48.90	6.00	4.80
Portland, Ore.	58.03	75.60	13.25	10.60
Salt Lake City, Utah	34.57	51.90	8.50	6.80
San Francisco, Calif.	52.75	75.60	13.25	10.60
Seattle, Wash.	58.81	80.25	13.25	10.60
St. Louis, Mo.	8.36	12.55	2.50	2.00
Washington, D. C.	35.50	67.00	8.00	6.40
Montreal, Que.	40.98	75.10	8.75	7.00
Halifax, N. S.	58.83	110.80 (Approx.)	13.50	10.80
Ottawa, Ont.	37.98	69.10	8.50	6.80
Quebec, P. Q.	46.63	86.40	11.00	8.80
Toronto, Ont.	29.58	52.30	6.75	4.60
Vancouver, B. C.	58.81	80.25	13.25	10.60

* Denotes 15 day limit; other fares for tickets with 30 day limit.

KANSAS CITY ANNUAL MEETING

TO public health workers in Kansas City, October 25–29 are "red letter days" on the fall calendar. When Mr. and Mrs. Delegate pack their bags for the 67th annual meeting of the American Public Health Association, they should come prepared for sports, sightseeing, and a wealth of scientific information. As chief host, Kansas City's Health Director, Dr. E. H. Schorer, has arranged a varied entertainment program. From a professional standpoint, 8 optional tours have been arranged, to give not only a composite picture of Kansas City's health program, but also an opportunity to see something of the city itself.

Scientific sessions on Tuesday and Wednesday evenings, October 25 and 26, will be held in the colorful Music Hall of the Kansas City Municipal Auditorium. The business session will be followed by dancing in the Little Theatre. Guest speakers for the public meeting on Wednesday evening, October 26, will be President Arthur T. McCormack, Health Commissioner of Louisville, Ky., and Dr. E. V. McCollum, Professor of Bio-chemistry at Johns Hopkins University, Baltimore, Md.

The Annual Banquet of the Association will be held on Thursday, October 27, in the vast main arena of the Auditorium. Entertainment will include various tribal dances by students from Haskell Institute, a federal training school for Indians at Lawrence, Kans.; music by a Negro choir of 500 members; and a 12 minute demonstration of color lighting from the huge dome ceiling of the Arena, where all of the various lighting effects obtainable in a modern theatre may be produced.

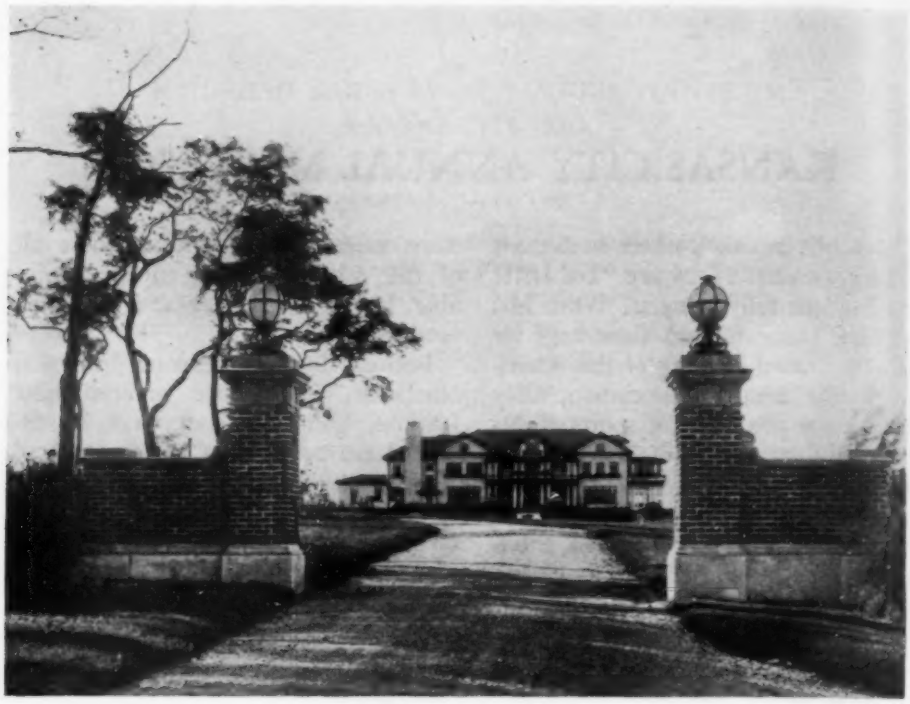
Between business sessions, banquets, luncheons, and other entertainment features, golf enthusiasts will be extended the courtesy of the sportiest of Kansas City's private courses. Ample time will be allowed for individual entertainment and for inspection of Kansas City itself. The 8 optional tours, as arranged by Chairman E. L. Filby, have been planned with this thought in mind, and with the thought that public health as affected by the manufacture of food products, meat inspection, the municipal water supply, and model dairy farms, may be studied at first hand. As outlined below, each of the tours includes at least one industrial or food plant, municipal water departments, or hospitals, closing with a tour of Kansas City's William Rockhill Nelson Gallery of Art, and the well known Country Club residential section.

Trip 1—Loose Wiles Biscuit Company, Armour Packing Plant, a tour of the Central Industrial Area, Country Club Residential Section, Nelson-Atkins Gallery of Art, and the Municipal Hospital group.

Trip 2—Swift Packing Plant, Southwest Milling Company, through Country Club Plaza and residential section, to Nelson-Atkins Gallery of Art, and Municipal Hospital group.

Trip 3—Cudahy or Wilson Packing Plants, west to Colgate Palmolive Peet Soap Manufacturing plant, through central industrial area, returning to Country Club Plaza and residential section, Nelson-Atkins Gallery of Art, and Municipal Hospital group.

Trip 4—To Municipal hospitals, and Union Station Plaza, with stops at the Liberty



Entrance to Longview Farm

Memorial, a combined monument and building erected in 1926 in honor of Kansas City's World War dead; south over the winding drives of Kansas City's Country Club Plaza and residential sections; returning by way of Nelson-Atkins Gallery of Art, University of Kansas City, Kansas City Art Institute, and Rockhill residential section, to Children's Mercy Hospital for inspection tour.

Trip 5—To Larrabee Flour Mills, and Municipal Waterworks in Missouri and Kansas, returning by way of Fairfax and Municipal Airports to hotel headquarters. The Kansas City, Mo., water purification works is a modern 100,000,000 gallon per day purification plant. The raw water which is taken from the Missouri River carries a large amount of suspended matter, and at times as much as 619 tons of suspended matter is removed per hour at this plant. The purification process consists of presedimentation, coagulation, chlorination, and filtration.

Trip 6—For those who register in advance, a 40 mile trip to Leavenworth, Kans., site of Federal Narcotics Bureau, Federal Penitentiary, and Old Soldier's Home. Within the walls of the federal prison, 3,103 men are gainfully employed in one of the various units which include an engine room, barber shop, broom factory, carpenter shop, shoe factory, tailor shop, hospital, and two farms. Of these, the engine room, barber shop, hospital, tailor shop, and farms are operated solely for the use of prisoners. Industries featured at the prison are the carpenter shop, broom shop, and shoe factory, finished products of which are sent to other federal bureaus to supply the Army and Navy, federal training schools for Indians, and other federal prisons.

Trip 7—Tuberculosis Hospital at Leeds, 10 miles out of Kansas City.

Trip 8—For those who register in advance, a 10 mile trip to Longview Farm, a 1,700 acre colony, with its own 20 acre lake, private water supply, chapel, modern dairy, greenhouses, and fine horses. It is operated by Mrs. Lula Long Combs, daughter of the late R. A. Long, who, while building a vast lumber kingdom, became interested in breeding fine horses. Interesting to visitors is Mrs. Combs's array of ancient hacks and rigs, complete with "driving apparel" from the Gay Nineties to the present day.

Longview's modern dairy contains 525 Guernseys, Holsteins, and Jersey cattle, which

Kansas City Tuberculosis Hospital

provide milk which is bottled and moved on conveyer belts to waiting dairy trucks. The greenhouse contains 35,000 roses and 25,000 gardenias, as well as a few orchids, carnations, and other cut flowers which are sold to wholesale florists. Of the 1,700 acres acquired in 1911–1912, approximately 100 acres are landscaped, 1,200 in cultivation devoted to raising of feed, and the remainder in pastures.

Second only to interest in convention activities and opportunities for recreation is a professional interest in the general health program being carried on in the host city.

Public health in Kansas City is both tax supported and voluntary, the latter being carried on through the health division of the Council of Social Agencies. The former is that which is done through the Board of Education, and the City Health Department.

The City Health Department, under the direction of Dr. E. H. Schorer, in addition to the divisions ordinarily found in a health department, includes a division of hospitals. These are the municipal General Hospital for the white, the General Hospital for the colored, and the tuberculosis and isolation hospitals for the white and colored. The staffs of the general hospitals are voluntary, and only members of the Jackson County Medical Society at the white hospital, and the Kansas City Medical Society for the colored are eligible. As 10 per cent of Kansas City's population is Negro, the general hospital for colored has a definite place in the local health program. Fifty per cent of the Negro children born in Kansas City in 1937 were born here.

The Tuberculosis Hospital at Leeds, Mo., is one of the few municipal hospitals in the United States for the treatment of tuberculosis. Patients are admitted through the tuberculosis service in coöperation with the Kansas

City Tuberculosis Society, and surgical treatment is given cases transferred from the state and county sanatorium. It has a modern surgical pavilion, completed within the last 2 years, where such operations as phrenicectomy, thoracoplasty, and pneumolysis are most frequently performed. The hospital's combined plant has been checked by many of the country's foremost phthisiologists and proclaimed a complete and modern working unit for the treatment of all types of pulmonary tuberculosis.

Out-patient departments are maintained at both of the General Hospitals, including a social service department, which coöperates with the Council of Social Agencies. All patients, except some at the Tuberculosis Hospital, are registered at the Central Index of Indigency.

Health work in the schools is under the Department of Health and Physical Education. Besides the health instruction given in the classrooms as part of the school curriculum, and the home care by the school nursing staff, special schools and classes are provided for under-privileged, physically handicapped children. There are 15 schools which have open air rooms for children who are contacts with tuberculosis, or who are predisposed to tuberculosis, or, in special cases, children with heart trouble or who are undernourished. There are also a trachoma school, a school for the deaf, a sight saving class in one of the schools, and a school for crippled children.

Diphtheria immunization during the past 4 years has been largely under the control of the medical profession of Kansas City, the Health Department supplying the immunization material. As a result of diligent effort, there were no deaths from diphtheria in 1936 and 1937, and the number of cases per year has been so markedly decreased that only 63 cases were reported last year in a population of 425,000.

The Council of Social Agencies brings together the various volunteer health agencies in Kansas City. The City Health Department and the Jackson County Medical Society also have representation on this Council. In addition to providing educational programs, this division also has special committees to study health needs of the community, with an eye to possible elimination of duplication or unnecessary services. Under this council are the health agencies supported wholly or partially by the Allied Charities Fund through voluntary contributions, the Red Cross, the Health Conservation Association, the Children's Bureau, Visiting Nurse Association, and the various hospitals, clinics, and health centers.

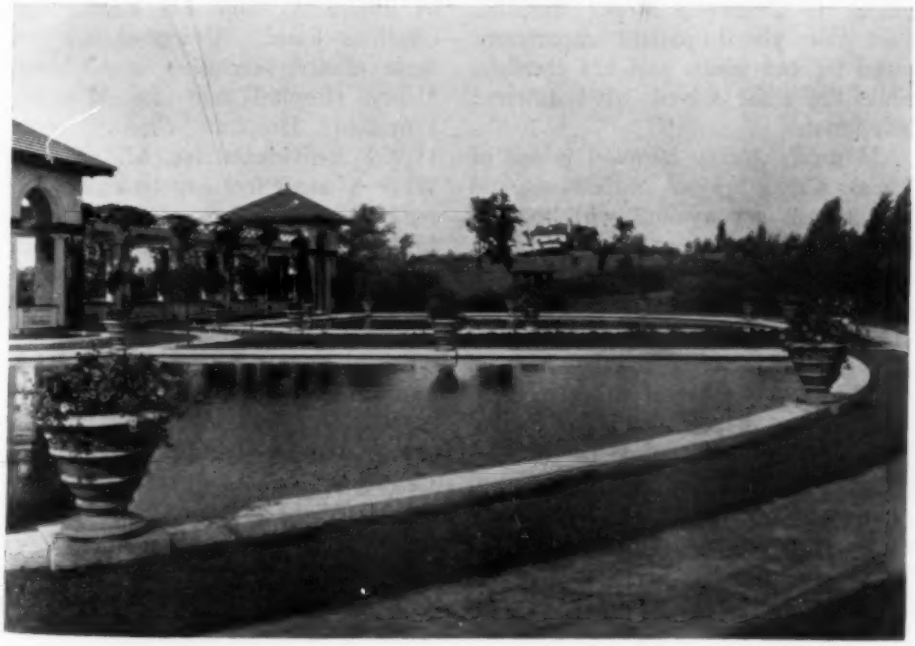
The Health Conservation Association is composed of a federation of volunteer health educational organizations. Component agencies include the Tuberculosis Society, Mental Hygiene Society, Cancer Control Committee, Child Guidance Clinic, Social Hygiene Society, Heart Committee, Dental Hygiene Committee, the Milk Committee, and the Pneumonia Committee. All of these organizations are housed in one central office for administrative purposes, and each carries on its own work, in addition to contributing to the joint health program of the association. Integration of programs and policies is provided by a board of directors, made up of 3 representatives from each component agency, together with 10 directors representing the public.

The Children's Bureau conducts an annual health canvass, with the aid of several hundred volunteers. Last year, 8,599 preschool children were examined at various centers located in public school buildings. Of this num-

ber, 5,156 were found to have defects needing attention, and the parents were referred to their physicians. Year round health educational work is done through special health institutes and group meetings. The Children's Bureau works in close coöperation with the City Health Department, the Jackson County Medical, and the Kansas City Dental Societies.

The Visiting Nurse Association, with its staff of 42 nurses, provides skilled nursing care to patients in their own homes, and endeavors to meet the needs of those who do not find it possible to employ a full-time nurse in the home. The full cost of a nursing visit is $1.00 (maternity $1.25), and the nurse is expected to collect as much of this sum as possible. Part pay service is available for those patients who wish to pay something, but who cannot pay the full cost of this service, and free health services are given to those unable to pay, made possible by the allotment received from the Charities Fund. The services available include general nursing, maternity nursing (prenatal and postnatal care), communicable disease nursing, tuberculosis nursing, child welfare service, and infantile paralysis service. This last consists of muscle training and massage, given in the patient's home, at the R. J. Delano School for crippled children, and at the Attucks School for Negro children. The association also supplies nursing service to 15 affiliated organizations. Last year the nurses made 98,494 visits to 18,717 patients, each nurse averaging 8.7 visits per day.

The Wheatley-Provident Hospital is one of 16 hospitals having an "A" rating among Negro hospitals accredited by the American College of Surgeons. It is also the only approved hospital to which moderately large sums have been given, that is owned, operated, and staffed by Negroes, and the only hospital in Greater Kansas City having accommodations for colored pay patients in private or semi-private rooms,



Lake at Longview Farm—10 miles outside Kansas City

Kersey Coates Drive, Kansas City

as well as wards. It maintains a children's ward for Negro children, similar to Children's Mercy Hospital. Last year the in-patient department cared for 463 adults and 125 children, while the clinic served 3,194 different individuals.

Children's Mercy Hospital is one of Kansas City's beloved institutions, and its name is synonymous with that of the late Dr. Katherine B. Richardson. It was founded more than 40 years ago for sick and crippled children whose families cannot afford to pay for hospital care. Last year the hospital cared for 2,344 different children, or an average of 195 per month, in the in-patient department; while in the out-patient department, 15,528 different children made 22,006 visits to the clinic, or an average of 1,571 visits per month.

Clinics and Dispensaries — People who cannot afford the paid services of physicians when sick or injured, may be treated in one of the several private clinics, maintained in part or entirely by allotments from the Kansas City Charities Fund. Altogether last year these clinics (exclusive of Children's Mercy Hospital and the Wheatley-Provident Hospital clinics) served 19,909 individuals for 62,857 visits. While a small fee may be charged for registration or drugs, no patient is turned away for lack of funds; on the other hand, proper investigation is made to prevent imposition. Many physicians and dentists give generously of their time both in the clinics and the hospitals.

Of these clinics, the Alfred Benjamin Dispensary and the West Side Health Center, or Richard Cabot Club will be mentioned. The Alfred Benjamin Dispensary is perhaps one of the best equipped charitable institutions in the country. It also houses the child guidance clinic of the Mental Hygiene Society.

The West Side Health Center is located on the once fashionable "Quality Hill," now more appropriately known as "Quantity Hill." It is a general health clinic.

The University of Kansas Hospital, located in Kansas City, will be of interest to public health workers because of the out-patient department, which serves patients on either side of the state line, the attendance exceeding 70,000 visits annually. The hospital has a bed capacity of 250 beds, and is owned and controlled by the Medical School. Eighty-five per cent of the beds are available for teaching purposes, in spite of the fact that the hospital is 80 per cent self supporting.

The hospital is located 2 miles southwest of the Municipal Auditorium, at 39th Street and Hudson Road, occupying a new site on the Kansas side of this metropolitan area. The newly developed medical plant is situated atop a hill, occupying 15 acres of land, including a group of 4 new buildings of modern construction: the hospital, the nurses home, the medical school, and the power plant. Recently completed are the children's pavilion, the new clinic building or out-patient building, and the Hixon laboratory devoted exclusively to research. The first 1½ years of the medical course are given at the University of Kansas at Lawrence, Kans., 40 miles west of here, where the departments of anatomy, physiology, bio-chemistry, and bacteriology are located. The last 2½ years are given in the Kansas City division of the medical school.

The foregoing is not intended to be comprehensive as regards public health work in Kansas City. Neither can it be said to do justice to Kansas City's many attractive features for amusement to visitors. Delegates will find Kansas Citians eager to make this meeting a most successful and pleasurable one for all who attend.

APPLICATION FOR HOTEL ACCOMMODATIONS

This application is reprinted for your convenience in making hotel reservations. The Hotels Muehlebach, President, and Kansas Citian are headquarters. Mail application to the address below and not to the hotel of your choice.

In making application for hotel accommodations, it is necessary that four choices of hotels be indicated and that a reasonable range of rates desired be shown. Whenever possible, arrangements should be made for occupancy of double rooms: only a limited number of single rooms are available.

HOUSING COMMITTEE
1028 Baltimore Avenue
Kansas City, Missouri

Date.....

Please make hotel reservations noted below:

Hotel ..... First Choice Hotel ..... Third Choice

Hotel ..... Second Choice Hotel ..... Fourth Choice

...Double Rooms with bath for ..... persons. .....Rate desired $... to $... per day

...Single Rooms with bath.....Rate desired $... to $... per day

...Suites—Parlor, ...Bedroom(s) with bath for ... persons. Rate desired $... to $... per day

Special Instructions .....

.....

.....

Arriving ....., hour .....A.M. .....P.M. Leaving .....

If the hotel of first choice is unable to accept the reservation, the HOUSING COMMITTEE will endeavor to comply with your second, third or fourth choice in the order named. You will receive direct confirmation from the hotel accepting the reservation when made.

Rooms will be occupied by:

NAME	STREET ADDRESS	CITY	STATE
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....

(Please attach sheet listing additional names if necessary)

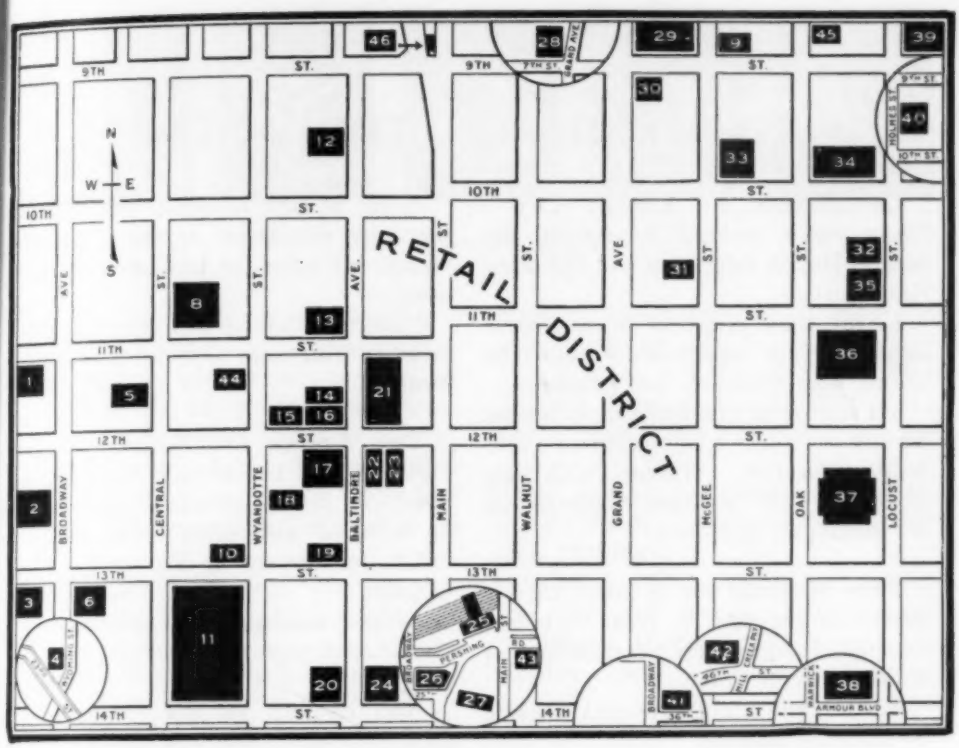
Name .....

Firm Name .....

Mailing Address .....

City ..... State .....

(See map on page 997)



HOTELS—(All Rates Quoted are for Rooms with Bath)

Map No.	Hotel	Address	Rates Single	Rates Double
18	Aladdin	1213 Wyandotte	$2.00–$2.50	$3.00– $5.00
21	Baltimore	12th and Baltimore	$2.00–$3.50	$3.00– $6.00
38	Bellerive	214 East Armour	$2.50–$4.00	$4.00– $5.00
14	Bray	1114 Baltimore	$1.50–$2.50	$2.50– $3.50
40	Coase	911 Holmes	$1.50	$2.50
2	Commonwealth	12th and Broadway	$2.00–$3.00	$3.00– $5.00
22	Dixon	12th and Baltimore	$2.00–$3.50	$3.50– $5.00
32	Drake	1016 Locust	$1.50	$2.50
41	Hyde Park	36th and Broadway	$3.00–$7.00	$3.50–$10.00
13	Kansas Citian	11th and Baltimore	$2.50–$4.00	$3.50– $7.00
17	Muehlebach	12th and Baltimore	$3.00–$6.00	$4.50– $8.00
42	Park Lane (Apartments)	4600 Mill Creek Parkway	$3.00–$5.00	$4.00– $7.00
16	Phillips	12th and Baltimore	$2.50–$4.00	$4.00– $6.00
33	Pickwick	10th and McGee	$2.50–$4.00	$3.50– $5.00
43	Plaza	13 East 24th	$1.50–$2.50	$2.50– $3.50
24	President	14th and Baltimore	$2.50–$5.50	$3.50– $8.00
44	Rasbach	1116 Wyandotte	$1.50–$2.50	$2.50– $3.50
10	Robert E. Lee	13th and Wyandotte	$1.75–$2.50	$2.75– $3.50
23	Sexton	15 West 12th	$2.00–$2.50	$3.00– $5.00
45	Snyderhof	917 Oak	$1.50–$2.50	$2.00– $4.00
15	Stats	12th and Wyandotte	$2.00–$3.50	$3.00– $6.00
9	Victoria	9th and McGee	$1.50	$2.00
46	Westgate	Main and Delaware at 9th	$1.50–$2.00	$2.00– $3.00

HALLS

Map No.	Hall	Address
11	Municipal Auditorium	13th to 14th, Wyandotte to Central
4	American Royal Building	23rd and Wyoming
8	Ararat Temple	11th and Central
20	Edison Hall	1330 Baltimore

PUBLIC BUILDINGS

Map No.	Building	Address
36	City Hall	414 East 12th
13	Convention Bureau, Chamber of Commerce	1028 Baltimore
37	Court House	415 East 12th
29	Federal Building	815 Grand
20	K. C. Power and Light Building	1330 Baltimore
27	Liberty Memorial	Union Station Plaza
26	Post Office	315 West Pershing Road
39	Public Library	506 East 9th
25	Union Station	30 Union Station Plaza

CLUBS

Map No.	Club	Address
5	Eagles Club	1108 Central
28	Elks Club	120 East 7th
13	Kansas City Athletic Club	11th and Baltimore
19	Kansas City Club	13th and Baltimore
12	University Club	918 Baltimore
34	Y.M.C.A.	10th and Oak
31	Y.W.C.A.	1020 McGee

CHURCHES

Map No.	Church	Address
1	Cathedral	411 West 11th
35	First Christian Church	11th and Locust
3	Grace and Holy Trinity (Episcopal)	415 West 13th
30	Grand Avenue Temple (Methodist)	9th and Grand
6	West Side Branch Baptist	1301 Broadway

PUBLIC HEALTH EDUCATION*

Consultation at Kansas City—Please make yourself known at the desk in Health Education and Publicity Headquarters.

Kindly come prepared to share your ideas and your experiences. And come loaded with questions and problems.

The editor of this department invites discussion with all concerned with health education. Workers with long experience will welcome opportunities for answering questions.

Free Material for Kansas City—Please do not send to New York free material intended for distribution at Kansas City in October.

Kindly ask for the correct mailing or shipping address.

Wanted! If Announced in Advance!—We want for display at Kansas City in October materials on public health education, college or school health education.

Descriptions, outlines, or reports of health education done by departments or associations, colleges, schools.

Topics, outlines, and full copies of talks, or various forms of broadcasts will find interested readers.

Photographs or drawings, posters or placards, projection material, dramatizations, 3 dimension exhibits, window displays—all will be given adequate space.

Much of the above could be mounted on large cards, or in portfolios or scrapbooks.

Please be sure to report long in advance for assignment of space and for specific shipping or delivery instructions.

Correct addressing and deliveries will do away with many troubles behind the scenes.

Two Copies for Kansas City—Please send 2 copies each of whatever you have, printed or mimeographed, to be included with other classified materials for display at Kansas City in October.

Address to the editor. See footnote on the first page of this department.

Roll Posters for the Receivers—Did you ever receive a poster in a roll, and try to flatten it for wall display? And have you rolled and rolled, and not always succeeded in making the top and bottom rest against the wall?

And while you are struggling with that poster did you wonder about the people who put out posters and fail to visualize the troubles they inflict upon the innocent receivers?

Are You Interested in Meetings? In Discussion?—Gatherings of 3 to 30, to 300 or even more, are among the chief channels for health education. Conferences or committee meetings almost lead as a method in planning and organizing public health activities.

There are ways leading to better meetings of all types. Discussion in committees and elsewhere can be satisfying and fruitful. We are working on meeting practices and discussion technics. Please tell us about your experiences and observations. Your help will be appreciated.

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* Please address questions, samples of printed matter, criticism of anything which appears herein, etc., to Evart G. Routzahn, 130 East 22d St., New York, N. Y.

EXPECTANT MOTHER
SEE YOUR DOCTOR BEFORE THE THIRD MONTH
LIST YOUR QUESTIONS
ASK THE DOCTOR
REPORT DANGER SIGNALS AT ONCE
WHEN BABY IS A MONTH OLD
COME BACK FOR A CHECK-UP
EXPECTANT FATHER
HELP YOUR WIFE KEEP FIT

MATERNITY CENTER POSTERS

Maternity Care Made Graphic—Effective examples of poster production by the silk screen process are offered by the Maternity Center Assn., 1 E. 57th St., New York, N. Y. Set of 5, *50 cents*. Each of the set, illustrated on this page, is 8 by 24 inches; 3 are white on blue, 2 are white on red.

The instructions say:

> These posters are designed for use in maternity clinics, mothers' classes, health centers, nursing associations, community exhibits, etc. Their purpose is to teach expectant mothers and fathers important points of maternity care in a clear and simple manner.
>
> They should be hung at eye level about 4 inches apart. If the color of the wall on which they are placed detracts from their value, they may be hung against a sheet of white paper, approximately 10 feet long and 40 inches wide. White wrapping paper, crepe paper, or corrugated paper looks well.

Journal for June, 1938—References in *American Journal of Public Health*, June, 1938:

"Medical Writing" (p. 705) emphasizes a condition and suggests a remedy.

"Nutrition Program in a State Health Department," by Morris (pp. 718–722) describes a school year in a Delaware county:

> "what we did, then how we did it, and finally why we did it."

Be sure to read "An American Museum of Health" (pp. 771–773).

"Newer Knowledge of Poliomyelitis" (p. 776) is a quotation of especial importance to all who deal with public opinion.

In "Books and Reports" see "How To Be a Convincing Talker" (p. 784), and "How To Use Pictorial Statistics" (p. 785).

See several paragraphs in "A Selected Public Health Bibliography" (pp. 792–794).

"Health Conservation Contests," (pp. 795–796) lists the 1937 winners.

"Health Education" is a subdivision under "Positions Wanted" (p. 799).

Note "Physical Education Associations Merge" (p. 801).

Why Not Use Colored Paper?—This question is posed in "Advantages of Colored Paper," by H. Falls, in *Direct Advertising*, Boston, Mass.

> "Why not write or print your message on a rich, warm, appealing shade that will attract women, instead of trying to tell your story on prosaic white paper which is in itself cold, commonplace, and impersonal?
>
> There is no doubt that color has a very definite influence on people. Instead of trying to get all the color into your advertising message with the use of colored inks, let the paper itself do part of the job. . . .

Why the Addresses?—So far as is practicable we give addresses from which originate whatever is mentioned in this department of the *Journal*.

This is done to facilitate correspondence direct from any interested reader. When we know the cost it is indicated.

When you send the editor a report, a pamphlet, or anything else, you would reduce the wear and tear by stating that you have some extra copies if health workers ask for them (or that you have no extra copies). If there is a price, please tell us. If 3 cents postage, or 5 cents, or more should accompany the request, please say so.

The editor does not supply the material mentioned in these pages.

"We Don't Have Time"—To prepare good health education material. That is the situation of hundreds of over-busy health officers.

One way out is to make use of what some one else has prepared.

We are delighted to see in bulletins good material quoted from other sources. And here come two examples of other uses made of material appearing in *Health News,* New York State Dept. of Health, as reported July 26, 1937:

Two city health officers, Dr. D. V. O'Leary, of Albany, and Dr. H. J. Shelley, of Middletown, recently made effective use of Health News items by having reprints made and distributed locally.

Dr. O'Leary distributed to several hundred local restaurants and other public eating places reprints of the "'Doctor Jones' says—" item of June 14 in which "Doctor Jones" told of seeing a restaurant worker "lick off" her fingers before and after handling food and commented on the dangers involved in this practice.

Dr. Shelley reprinted in parallel columns two items from the issue of June 28: one referring to an outbreak of scarlet fever traced to raw milk which was being sold without a permit; the other, to an award of damages against a milk dealer and producer in connection with a case of undulant fever in which the infection apparently was conveyed through milk. Dr. Shelley distributed the reprints to local milk dealers and producers.

Our disappointment is that Dr. O'Leary and Dr. Shelley did not send us samples long ago.

When the Scientist Is a Writer—Under "Publications" in the 1937 annual report of the Commonwealth Fund (41 E. 57th St., New York, N. Y.) is this paragraph:

Scientific writing in the United States is not distinguished for simplicity or grace, and much of the work in which the Fund is interested has been done in fields where concepts are still shadowy and terminology undisciplined. Moreover clarity means one thing to the scientific reader—who asks only an orderly sequence of declarative sentences built from a precise and highly specialized vocabulary—and another to the layman, who deplores "jargon," responds to simple prose rhythms, and usually needs analogy and metaphor as a bridge to unfamiliar ideas. Since the Fund serves now one audience, now another, and deals often with technical experts who are inexperienced in authorship, it requires care and flexibility in editing to make sure that each publication is in the form which will make it most useful.

The report calls attention to an important aspect of foundation publication activities:

Many of its publications fulfil their aim with sales which are numerically insignificant but which reach key people who make effective use of the books they buy . . .

On the other hand a foundation, seeking educational rather than cash returns, is in position to issue publications of value which might not interest a commercial publisher, and sometimes the results are surprising. When *The Problem Child in School* was just off the press, in 1925, a reader for a commercial publishing house estimated that in the trade total sales of 300 might be expected for it. The Fund has sold to date more than 17,000 copies. This happens rarely. But on many occasions in the last ten years there has been evidence that the books published by the Fund have been inherently useful and actually used.

"One Third of a Nation"—Under this title the WPA Federal Theater in New York City presents another "edition" of its "Living Newspaper." According to *Cue:*

"This is the biggest and most thorough of the Federal Theater's lantern slide and lecture investigations of various phases of the

nation's industry, habits, and practices. It takes the history of the housing problem in New York City for its theme, and traces it from the old colonial land grant days to the nirvana of Federal housing."

"It is a vigorous, well written, and emphatic platform-play true in every detail and with an enormous inpact . . .

"It is a little shocking to be reminded that houses still exist where the law calls for only one water tap and one toilet per floor, and where central heating is one of the major mysteries. The play is a monument of ingenuity in staging, research, and in assembling, and editing, the latter done by the increasingly skillful Arthur Arent . . ."

"As a matter of fact, there is not much acting in the usual sense. In those scenes depicting the cholera plagues and in other vignettes of human misery, some neat little characterizations were accomplished briefly and to the point . . ."

"The work is hereby earnestly recommended, not only to social workers and those interested in a further government participation in low cost housing, but to students of stage mechanics, scene designers, and people generally interested in the theatre . . ."

WANTED

A request from Hedurg B. Poehler, instructor in nutrition, Health Dept., Milwaukee, Wis., is a reminder of how little nutrition material has come in from all the health agencies of the country. Please reply direct to this inquiry:

"I would like to collect nutritional material for an exhibit at the convention of the American Dietetic Association to be held in Milwaukee this fall. Can you tell me which public health organizations, local and state boards of health, have exceptionally good pamphlets, posters, devices, etc., for teaching nutrition?"

BOOKS AND REPORTS

Manual for Water Works Operators—*Prepared by the Manual Committee, Texas Water Works Short School. Edited by E. W. Steel. Austin, Tex.: Texas State Department of Health,* 1938. 278 pp. Price, $2.00.

In 1933 the Texas Water Works Short School for water works operators and superintendents took a forward step in emphasizing the importance of employing trained personnel in the operation of public water supplies by initiating a system of voluntary licensing of water works personnel.

Three grades of licenses are issued, based on factors that reflect the experience, training qualifications, and ability of the applicant.

Since written examinations are required in qualifying for the various grades of licenses, it seemed desirable to provide the applicants with reference material containing the basic information necessary in preparation for the examination. While the manual has been prepared to meet this especial need in Texas, it has equal value for any water works superintendent or operator who desires a compact review of the essentials of water treatment methods.

Prepared especially for in-service training of water department personnel, the manual secures brevity by the elimination of factual data that can reasonably be expected to be the common knowledge of all well informed operators. Through the use of references placed at chapter endings, supplemented by an appendix listing useful publications; the reader is stimulated to extend his technical reading in the water works field.

The manual will be a desirable addition to the library of a water works department, where it will lend encouragement to the operator who wishes to improve his technical qualifications by in-service training.

The public health administrator will be interested in the emphasis that the publication of this manual gives to the need for employing water works personnel with special training, who are qualified to assume the responsibility for the production of safe potable water for public use. EARNEST BOYCE

A Textbook of Hematology—*By William Magner, M.D., D.P.H. Philadelphia: Blakiston,* 1938. 395 pp. Price, $4.50.

This excellent work merits a high degree of popularity among students, technicians, and practitioners of medicine. After careful study of its style, its contents, and the arrangement of its material, such a statement can be made without qualification. There were already so many good and dependable texts on hematology in our libraries the publishers must have recognized well its fine qualities before they agreed to undertake its manufacture.

The diction is clear and direct like that used by an experienced teacher. No words are wasted in discussions of controversies; the point of view of the proponent of each theory is explained briefly; at the end a single sentence places the entire matter where it seems to belong. Two instances may be noted to illustrate this method. With regard to the origin of the monocyte, various theories are credited to the proper individuals, then: "It would appear that the weight of evidence is in favor

of the view that monocytes arise from reticular cells, chiefly in the spleen and connective tissues." The differential enumeration of the granulocytes as initiated by Arneth and as modified and changed by Schilling, Booke, and Ponder, and others is explained briefly but clearly. The section ends with this statement: "The experienced hematologist will find that the more familiar he becomes with Schilling's theory and method, the more will he be attracted to the hemogram as a method of analyzing the blood picture."

The first part of the book deals with the blood and its various elements in health and in disease; a chapter is devoted to laboratory methods; then the anemias and finally the leukemias are discussed—briefly but satisfactorily. In the excellent bibliography and the carefully prepared index one finds no mention of the Niemann-Pick nor of Gaucher; considering the rarity, and difficulty in diagnosis of the conditions associated with these names, their omission is not serious.

A. P. HITCHENS

The Psychology of the Unadjusted School Child—*By John J. B. Morgan (rev. ed.). New York: Macmillan,* 1937. 339 pp. Price, $2.25.

This revision of Dr. Morgan's application of mental hygiene to the understanding of the school child (at home as well as at school) is characterized by the directness and clarity, as well as by the authenticity, which marked the original edition (1924). Since 1925, the author has studied more than 2,500 children in the Psychological Clinic at Northwestern University, and his understanding and precise description of children's problems have been enriched by this experience.

"The majority of queer people whom we encounter did not become that way suddenly, . . ." says the author in his opening paragraph. "They started early in life, often in infancy or childhood, and progressed by almost imperceptible degrees into the confirmed eccentricities that we now see." The queerness and eccentricities of adults, and even "the more extreme peculiarities that distinguish some types of mental disorder," may often be prevented if the maladjustments developing in the child are corrected. To every child, if he is to grow into a mentally healthy adult, there must be given opportunity for the joy of achievement and the satisfaction which comes from solving life's problems, himself. These, the author believes, will enable the child, as he grows up, to meet difficulties easily—even gladly.

The book is an excellent practical guide to teachers and parents.

FREDERICK W. BROWN

The Compleat Pediatrician: Practical, Diagnostic, Therapeutic and Preventive Pediatrics—*By Wilbur C. Davidson, M.D. (2nd, rewritten ed.) Durham, N. C.: Duke University Press,* 1938. 250 pp. Price, $3.75.

This is a valuable compendium of pediatric materials, encyclopedic in nature, which has been prepared as a ready reference for practitioners of medicine especially interested in pediatrics. Essential information gleaned from recent pediatric literature finds a place in this unique volume. It is arranged in convenient, concise form so that any of the diseases of infancy and childhood may be traced easily as to symptoms and signs, differential diagnosis, and treatment. A very helpful chapter is included on laboratory and other procedures frequently used in pediatrics. The preventive aspects of modern pediatrics are stressed especially in the chapters dealing with nutritional requirements, gastrointestinal and circulatory diseases, metabolic and glandular groups. The extensive bibliography accompanying the book and the detailed

index add greatly to its value as a reference volume.

RICHARD A. BOLT

Diet and High Blood Pressure—*By Dr. I. Harris. Toronto, Ont., Canada: Longmans Green,* 1937. 196 pp. Price, $3.50.

This is a readable book written "for the normal individual, and not for people suffering from high blood pressure." It is based on research done under the direction of the author, on the problem of high blood pressure. It has led him to feel sure that by correct dieting the life of those suffering from high blood pressure can be prolonged. He is emphatic on prevention, and holds that no drugs will ever cure "heart disease." He says, "We put our faith in miracles, in bottles of medicine, in fashionable spas. Believe me, they are false gods; they cannot help us. There is only one way to good health and longevity—obey strictly the laws of living." He warns against gluttony, calling attention to the fact that in the past food had a different meaning than at the present, owing to the difficulty of obtaining it. "In those days a feast performed a vital function. . . . The ritual still remains. Communal feeding is apparently still the only way to mark an auspicious occasion or to do honour to an individual. . . . Public feeding in modern times is an orgy of gross over-indulgence. To gorge food and drink until our senses are benumbed is surely a crude form of sensuality. . . . Our banquets have the broad features of worship of sensuality."

While some of the author's views will be considered extreme by many, in general his teaching is sound. "The golden rule in eating is moderation and variety. There is hardly any type of food or drink which can do harm as long as one lives up to this maxim. . . . As long as one is moderate there is very little that man cannot eat and drink."

The book ends with an appendix of 53 pages giving a number of diets, food values, and excellent recipes for preparing the foods advised. The book is easily written and may well be studied by a great variety of readers.

MAZŸCK P. RAVENEL

Safe Living—*By C. W. Hippler and Helen Burr Durfee. New York: Sanborn,* 1937. 188 pp. Price, $.80.

It is amazing how many safety factors exist in the environment in which children of school age live, for this is a book primarily for children. The text is a record of plausibly real experiences by the children themselves.

The recounting is largely in dialogue, partly in description. The teacher's participation is behind the scenes. It is the children who develop the problems and find the solutions. There is a ring of earnest sincerity in the text as if the authors were impelled by deep conviction.

The fields for safety the book covers are school, going to and from school, home, neighborhood, highway, farm, and vacation. The chapter on Safety and Health reviews briefly some of the general health practices particularly applicable to children. An excellent book.

W. W. PETER

Let's Help the Doctor—*By Margaret O'Donovan Rossa, R.N. New York: The Devin-Adair Company,* 1937. 141 pp. Price, $1.50.

This book had two origins. The overwhelming cost of hospital care and nurses for the average one-salaried family. The lack of information among intelligent mothers about what to do for the sick at home.

Out of her own experience and observation as a private duty nurse the author assembled this compendium. It attempts to give instruction of a kind

in many directions so that mothers may know what to do and what not to do to help the doctor in cases of sickness which can be cared for in the home. W. W. PETER

Father's Doing Nicely—*The Expectant Father's Handbook—By David Victor. Foreword by George W. Kosmak, M.D., drawings by Tom Torre Bevans. New York: Bobbs Merrill.* 170 pp. Price, $1.50.

The expectant father has been the butt of many good natured jokes. Classes for expectant fathers have been formed in few places. Obstetricians and nurses have had to deal with "paternity pains" as best they could. All this calls for a plain statement of the facts illustrated with caricature and humor which the average man can well understand. This delightful book fills such a need. From the outside cover to the last page it affords an antidote to the fears and forebodings of "the forgotten man of propagation." Intermingled with the humor and drawings there is a serious strain which emphasizes the essential acts in the drama of childbirth in such a manner that it will pass through the mails without censorship. As Dr. Kosmak points out in the foreword, "in recommending the book for prospective fathers, attention can be directed to the fact that it should prove of equal value to their wives."

RICHARD A. BOLT

The Sanitary Inspector's Handbook: A Manual for Sanitary Inspectors and Other Executive Public Health Officers—*By Henry H. Clay. (3rd ed.) London: Lewis,* 1937. 480 pp., 95 ill. Price, $5.00.

The demand for the second edition (1936) of this admirable work made it possible to publish this edition synchronously with the coming into operation of the British Public Health Act, 1936. References to new Acts, Regulations, and Byelaws have been made in considerable detail because of their importance to all public health administrators and sanitary inspectors of Great Britain. Such thorough revision as has seemed necessary has resulted in the third edition being nearly 100 pages larger than the first.

While this volume is intended specifically to be a guide and reference text for sanitary inspectors working under the English regulations, and therefore invaluable to them, it is truly a mine of information for all others as well who are concerned with the public health. The arrangement of the material which constitutes nearly all of the 31 chapters is in keeping with other rare qualities of the book. First there is explanatory matter, then are quoted the legal provisions which pertain to the subject, and the chapter ends with an exhaustive discussion of accessory information intended to give the inspector an adequate background for his work.

The final chapter contains "Useful Memoranda and Glossary of Building Terms." This includes data of all varieties from the value of "pi" to the definition of "Brick Nogging."

It has not been possible to find in the excellent index any reference to the sanitation of public eating and drinking establishments. Supervision of the cleansing of tableware and beer glasses is probably not a function of the sanitary inspector.

The book is admirable in every way and its usefulness is not by any means localized by its having been written around British Acts, Regulations and Byelaws. A. P. HITCHENS

Programs for Local Tuberculosis Associations — *Administrative Series No. 4—Prepared by Murray A. Auerbach. New York: National Tuberculosis Association,* 1937. 67 pp. Price, $.50.

As a chart for executives in charge of local tuberculosis associations, it would be hard to excel this monograph. It is a scholarly and thorough piece of work that demonstrates the wide knowledge of programs that have been carried on and their successes and failures, and the fundamentals of an intelligent approach to tuberculosis work. Not only that, but the author shows that he has had enough experience to recognize the value of good community organization and to know how to get it.

From the point of view of those interested in community health programs extending beyond the field of tuberculosis, one is impressed by the fact that there needs to be the closest possible coördination of tuberculosis programs with those of other agencies in the health field. Their work touches at many points. Many of the technics and programs suggested will be useful to any health executive. They should be helpful to the official health commissioner in knowing how to use community resources and the most effective means of coöperating with the local tuberculosis association.

While the tuberculosis problem remains an outstanding one in spite of the progress that has been made, and a big job still lies ahead, nevertheless its very successes make it clear that the time will come when the problem will be sufficiently under control that tuberculosis organizations will naturally develop into community health organizations in which their possibilities will be practically unlimited.

For the tuberculosis secretary comparatively new to his work, Mr. Auerbach's treatise will be a boon. For the experienced executive, these ideas so clearly set forth, will prove decidedly helpful. He may well use these programs even though they do not presume to be complete, to check on his own activities. As a concise, practical presentation, this little pamphlet sets a high mark. BLEECKER MARQUETTE

Journal of Milk Technology—*Vol. I, No. 1, October, 1937, to Vol. I, No. 3, March, 1938. Official publication of the International Association of Milk Sanitarians, 17–19 Day Street, Orange, N. J.* Subscription price, $5.00.

The familiar blue covered report issued yearly by the International Association of Dairy and Milk Inspectors has undergone a metamorphosis after the publication of the *25th Annual Report* of this Association. The proceedings of this Association, which changed its name in 1936 to the International Association of Milk Sanitarians, are now to appear in the form of a blue covered bi-monthly journal known as the *Journal of Milk Technology*.

Three numbers of this journal have already appeared and are sufficient to show that this method of publication is an improvement on the older method as it not only permits the printing of the papers presented at the annual meeting of the association but also allows the insertion of a certain amount of new and current material. Papers of particular importance to dairy and milk inspectors are also being abstracted, making the publication one of very real value to all men interested in dairy and milk inspection work. As the journal is the official publication of the association, all members of the association receive it without any increase in the membership dues of $5 a year.

ROBERT S. BREED

Clinical Psychology: A Handbook of Children's Behavior Problems—*By C. M. Louttit. New York: Harper,* 1936. 695 pp. Price, $3.50.

If one were to evaluate this book entirely on the basis of its more than 800 summaries of the most recent research in the field of clinical psy-

chology and the 60 other extensive quotations from case histories of behavior problems and their treatment, it would be described as a well organized and carefully documented reference book. The author's clear interpretation of his material and the practical applications of it give it added value as a "textbook for students of clinical psychology."

Its contents may be briefly indicated:

Part I—Methods, includes an introductory chapter and two chapters on Diagnostic Methods, devoted to Anamnesis and Examination and to Psychometrics, respectively.

Part II—Problems Correlated with Abilities, deals with the following topics, to each of which a chapter is given: Mental Deficiency or Feeble-Mindedness; School Retardation; Specific Disabilities in School Subjects; and Superiority.

Part III—Primary Behavior Problems, contains 6 chapters covering the following subjects: Behavior Problems: Introduction; Conduct Problems; Juvenile Delinquency; Speech Defects; Personality Problems; Psychoneuroses and Psychoses.

Part IV—Problems Correlated with Organic Disabilities is divided into two chapters, the first dealing with Sensory Defects and the second with Neurological and Physical Disabilities.

A list of references and a good index complete the volume.

In a foreword L. T. Meiks, M.D., emphasizes the unique opportunities of the family physician and the pediatrician for observation and intimate knowledge of the family background of children under their care and the recognition "of many of these behavior disorders in their incipience, before the untrained associates of the child realize that the reactions are in any way undesirable. An enlightened medical profession," he says, "can do much to prevent the development of these disorders and to handle them in the proper fashion once they have appeared." Both Dr. Meiks and the author recognize the need for the specialized technics of the trained psychiatrist and clinical psychologist in solving many behavior problems. Running throughout the book is the refrain, "Treat the child as an integrated whole."

The book should serve its purpose well, whether its reader be the embryo psychoclinician, to whom it is addressed, the medical student, or the physician or school administrator seeking to keep abreast of the most recent work in the field of clinical psychology.

FREDERICK W. BROWN

More of My Life—*By Andrea Majocchi. New York: Knight Publishers,* 1938. 313 pp. Price, $2.50.

All who read *Life and Death* will welcome this addition to the autobiography of Italy's famous surgeon. The author speaks of these new stories as "Pages from my life . . ." "notes torn from a surgeon's diary," yet they have, as he says, a definite relationship to one another although apparently little connected. To a certain extent it is a biographical sketch of a great friend and senior surgeon, Dr. Franco Forti.

Biographies, even of the humblest people, if they are sincere, carry much of interest. When we have the story of a man who has come into contact with life in so many varied forms as the author of this book, it cannot but be of intense interest. Some of the chapters have been dedicated to three persons, an unknown patient, a nun, and a priest, who had been deeply moved by reading *Life and Death*. We have no hesitation in picking out these chapters as easily the best in the book, The Sacrifice, The Hymn to the Sun, Mass at the Front, and Sunset. To these we would add, Human Depths.

It seems to have become the fashion for doctors to write autobiographies. Among those which have appeared, this stands easily among those at the top. It is the story of a man who has worked hard, studied both books and men, has loved his kind and devoted his life to their betterment. Above all, it is simple

and sincere. It can be recommended without reservation.

The book is beautifully printed and gotten up. It is a pity that the translator did not consult a doctor, which would have avoided several errors which jar on the professional man.

MAZŸCK P. RAVENEL

Step by Step in Sex Education—*By Edith Hale Swift, M.D. New York: Macmillan,* 1938. 207 pp. Price, $2.00.

This is a unique presentation of sex education material arranged in dialogue form between parents and a boy and girl in the normal relations of family life. It proceeds step by step as the children advance in age to give them a scientific nomenclature of sex anatomy and physiology, at the same time revealing to each child the personal and social implications of sex. It is written primarily for parents who are at a loss to know how to approach the subject when confronted by the curiosity and perplexing questions which modern children present. It is clothed in everyday conversational style and is clear and concise without a trace of morbidity, although the author does not stop at introducing the most intimate situations in sex relations. The only part of the book which might arouse controversy is that dealing with contraception, which is confined to a few pages at the end.

RICHARD A. BOLT

Fluorine Intoxication—*A Clinical-Hygienic Study, with a review of the literature and some experimental investigation—By Kaj Roholm. Copenhagen: Nyt Nordisk Forlag—London: H. K. Lewis and Co. Ltd.,* 1937. 364 pp.

In a succinct review, it is impossible to do adequate justice to what is probably the outstanding contribution to the literature of fluorine. The thorough manner in which the author deals with the subject expresses itself in a monograph which includes 57 tables, 96 figures, and a bibliography of 893 references.

Although primarily begun as an industrial hygiene study, the author has encompassed the whole field of fluorosis in a manner that makes the book one of equal interest to those in other branches of medicine, especially pediatricians, orthopedists, and radiologists, as well as epidemiologists, dentists, biochemists, veterinarians, and agriculturists.

The discussion of the prevention of fluorine intoxication embraces the whole group of fluorine compounds found in industry. The author states (p. 310) that "it would be desirable to forbid the employment of males under 18 years and females as a whole, on work with fluorine compounds which give off dust or vapour." The necessity for control of all sources where fluoric dust or vapor is generated, is emphasized in detail, not only with respect to the workers but to that area surrounding the factory that might become contaminated by volatile fluorine compounds.

Although numerous experiments in induced experimental fluorosis have shown considerable storage of fluorine in the bones with a resultant development of defective osseous structure, Roholm demonstrates that comparable conditions are not uncommon among cryolite workers.

In a chapter entitled "Post Mortem Examinations of Two Cryolite Workers," the author records (p. 184): "After *Skeletonizing,* the bones present marked changes. All are of a chalky-white color, the surface is irregular and the weight considerably increased." Calcification of the ligamentous attachments was commonly observed. The fluorine content of the costal bones was 9.9 and 11.2 mg. per gm. of bone ash respectively whereas about 0.5–2.1 mg. of fluorine per gm. of bone ash is re-

ported for 11 normal human costal bone samples. These two workers had been exposed for 9 and 24 years respectively to cryolite (Na_3 Al F_6) dust with a calculated fluorine intake daily of about 0.20–0.35 mg. of fluorine per kg. of body weight.

The author also observes that among 5 children "born of women who either worked at the cryolite factory before or during pregnancy or started to work soon after the birth, 3 showed a mottled enamel condition of the teeth" years later when the permanent teeth erupted.

From a diagnostic viewpoint, Roholm divides chronic fluorosis into three different stages.

1. The dental anomaly known in man as mottled enamel and in the herbivora as darmous or gaddur
2. Osteosclerosis, an occupational disease among cryolite workers and possibly other workers exposed to relative large amounts of fluoride
3. An osteomalacia-like disease endemic among herbivora in the environs of certain factories in Europe

The dosage that can produce the various forms of this chronic intoxication is uncertain according to the author, but seems to rise from (1) to (3).

For those interested in any of the various phases of fluorine intoxication, this book is especially recommended.

H. TRENDLEY DEAN

The Subnormal Mind—*By Cyril Burt, M.A., D.Sc. (Oxon.). (2nd ed.) New York: Oxford University Press,* 1937. 372 pp. Price, $5.00.

This volume is an assemblage of the third series of Heath Clark Lectures, delivered at The London School of Hygiene and Tropical Medicine in 1933, revised for publication. That a second edition was called for in a short time—the first appeared in 1935—is practical evidence of the favor which the book has received.

The opening chapter is devoted to the normal mind, hence the author proceeds to his presentation of the mentally deficient, the dull or backward, the delinquent, and the asthenic and the sthenic neuroses.

The American reader will be interested in the discussion of such English legislation as the Mental Deficiency Act of 1927. The author has brought together the findings of many English studies, including his own, and from these he presents statistical evidence as to prevalence and causes of the conditions dealt with. From these facts he draws his conclusions in what appears to be a reasonable and fair manner. The relationship between such environmental conditions as lead to lack of rest and to retardation in school is brought out forcibly.

Regarding the delinquent, the conclusion is: "About the value of preventive psychology or medicine in dealing with the adult criminal, I am, indeed, pessimistic; over the treatment of the juvenile offender, I am almost always hopeful, and the younger the case, the higher my hopes."

The book is well printed, the style is good, and the material well organized. There is no undue repetition, and the author is not dogmatic in his own point of view. Throughout, there runs a pleasant humanistic touch which gives conviction regarding the author's opinion. This volume is a worth while addition to the library of any worker in the broad field of child welfare.

GRANT FLEMING

The Collapse Therapy of Pulmonary Tuberculosis — *By John Alexander, M.D., F.A.C.S. Springfield, Ill.: Thomas,* 1937. 705 pp. Price, $15.00.

The subject of collapse therapy of tuberculosis is covered in detail in this excellent book. Chapters one and two are devoted to the perspective of col-

lapse therapy in tuberculosis and the evolution of surgical therapy. Following are sections on physiological principles and pathology of pulmonary collapse by Dr. Max Pinner. Two chapters on pneumothorax are contributed by Dr. John Blair Barnwell and a chapter on oleothorax by Dr. Kirby Smith Howlett, Jr.

The author has admirably fulfilled his purpose, as stated in the preface, of writing a book for both surgeon and internist. Based on wide clinical experience, the indications and contraindications for the various operations that may be performed in the treatment of pulmonary tuberculosis are discussed. The section on "choice of operation" is of equal interest to all phthisiologists who are faced with the problem of determining the proper time for surgical intervention.

The technic, preoperative and postoperative management, as well as various complications that may arise in each surgical procedure are described in detail. Discussions of operative technic are supplemented by excellent illustrations.

Exceptions may be taken to certain details and particularly the choice of anesthesia for thoracoplasty. Such criticisms, however, are of minor importance, as the work supplies, with authoritative clarity and in a practical and detailed manner, valuable information concerning all phases of the collapse therapy in tuberculosis.

The material is well organized and indexed, and extensive references to the literature are given. This work is recommended to all who are interested in the subject of tuberculosis.

The book is beautifully printed and the make-up fine. It is a typical example of the excellent products which come from the house of the printer.

BRIAN BLADES

BOOKS RECEIVED

PARASITOLOGY. With Special Reference to Man and Domesticated Animals. By Robert Hegner, Francis M. Root, Donald L. Augustine and Clay G. Huff. New York: D. Appleton-Century, 1938. 812 pp. Price, $7.00.

MATERNAL CARE COMPLICATIONS. Dr. F. L. Adair, Editor. Chicago: University of Chicago Press, 1938. 95 pp. Price, $1.00.

A GENERAL TEXTBOOK OF NURSING. By Evelyn C. Pearce. New York: Dutton, 1938. 888 pp. Price, $3.75.

INSULIN. Its Production, Purification and Physiological Action. By Douglas W. Hill and Frederick O. Howitt. New York: Chemical Publishing Co., 1936. 219 pp. Price, $5.00.

SOUTH ITALIAN FOLKWAYS IN EUROPE AND AMERICA. A Handbook for Social Workers. New Haven: Yale University Press, 1938. 216 pp. Price, $2.50.

PHYSICAL AND HEALTH EDUCATION. Principles and Procedures. By Helen Norman Smith and Helen Leslie Coopes. New York: American Book Co., 1938. 323 pp. Price, $2.25.

INTRODUCTION TO BACTERIOLOGICAL CHEMISTRY. C. G. Anderson. Baltimore: Wood, 1938. 278 pp. Price, $4.00.

SWIMMING AND DIVING. By American Red Cross. Philadelphia: Blakiston, 1938. 271 pp. Price, $.60.

SALARIES IN MEDICAL SOCIAL WORK IN 1937. By Ralph G. Hurlin. New York: Russell Sage, 1938. 34 pp. Price, $.20.

REPORT OF THE HOSPITAL SURVEY FOR NEW YORK. By Arthur W. Jones and Francisca K. Thomas. Vol. III. New York: United Hospital Fund, 1938. 571 pp. Price, $2.00.

MACLEOD'S PHYSIOLOGY IN MODERN MEDICINE. Edited by Philip Bard. 8th ed. St. Louis: Mosby, 1938. 1051 pp. Price, $8.50.

TECHNICS FOR THE BACTERIOLOGICAL EXAMINATION OF DRINKING WATER. Fifteen methods currently in use. Health Officers' News Digest, Public Health Committee of the Cup and Container Institute, 30 Rockefeller Plaza, New York City, 1938. 10 pp. Mimeographed. Free upon application.

HEALTH GUIDES AND GUARDS. By Francis P. Wall and Louis D. Zeidberg. New York: Prentice-Hall, 1938. 380 pp. Price, $1.40.

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

Food for Thought — Complacent sanitarians will be shocked to learn that smallpox has been increasing since 1934. In 1937, more than 11,000 cases occurred, and during the first 20 weeks of 1938 the incidence was twice as high as during the same time last year. With the exception of India, and one or two other benighted countries, the grand old U. S. enjoys the highest smallpox rates. The problem is confined generally to the central and western states.

ANON. Prevalence of Communicable Diseases in the United States. Pub. Health Rep. 53, 23:935 (June 10), 1938.

How May Nursing Services Be Measured?—Total home and school visits and clinic attendances is an unsatisfactory measure which, when vigorously applied, discourages the nurse from giving the health services her visits are intended to provide. Length of visit in the home is suggestive only in the lower brackets. Something should be done about developing valid indices of accomplishment rather than putting on heat through widespread use of quantitative measures.

BEAN, H. Number and Length of Nursing Visits as Indices of Nursing Services. Pub. Health Rep. 53, 22:913 (June 3), 1938.

Midwives in Great Britain—It is to be regretted that many American sanitarians will not have the opportunity to see this series of papers on British midwifery services, if only to open their eyes to the fact that in some European countries the midwife is a recognized public health servant on a par with the home visitor and the technician. Of course, we do things better over here: with certain outstanding exceptions, we hide our collective head in the sand so we may blissfully ignore the whole problem.

BERKELEY, C., *et al.* The Operation of the Midwives Act, 1936. Pub. Health. 51, 9:257 (June), 1938.

Sound Health for All—Forcibly reminding us that a large part of public health activities are concentrated on the care of the known sick rather than devoted to the improvement of the apparently well, the future program had better be pointed to improving housing, better application of the principles of nutrition, development of mental hygiene, and the encouragement of physical fitness, suggests the author.

BOUDREAU, F. G. Family Health Goal of Public Health. Pub. Health Nurs. 30, 6:346 (June), 1938.

Pollution Movement from Latrines—Chemicals placed in a typical privy vault can be recovered over 300 feet away, but fecal organisms were limited to a 10 foot dispersion. In pervious soils the colon organisms did not penetrate more than a foot below a dry latrine, and only about 6 feet from a wet latrine. Probably there are many more findings of importance to sanitarians in the 67 pages in three papers devoted to this subject.

CALDWELL, E. L. Pollution Flow from a Pit Latrine When Permeable Soils of Considerable Depth Exist Below the Pit. *et seq.* J. Infect. Dis. 62, 3:225 (May-June), 1938.

Where Knowledge Is the First Need — Detroit's negro population tripled in 17 years. Essentially a rural people, city environment raises havoc

with them. The infant death rate was 5 times that of the white population. Health education was and is badly needed. How Detroit meets the need is interestingly told.

CONNOLLY, M. P. Helping the Negro to Help Himself. Health Officer. 3, 1–2:19 (May-June), 1938.

Poliomyelitis Epidemiology — Prevalence of poliomyelitis since 1916 is considered, and distribution of the disease by counties during the last 5 year period is reported. Although the disease is country-wide, it is extremely irregular in its appearance; in some outbreaks only a few counties are involved, in others whole regions. Case and fatality rates showed great variation from year to year and place to place. One conclusion is that we should make more epidemiologic studies as well as expand laboratory research.

DAUER, C. C. Studies on the Epidemiology of Poliomyelitis. Pub. Health Rep. 53, 25:1003 (June 24), 1938.

Common Sense Advice about Health Education—Health education will be effective to the extent that all departmental staff members are giving the same advice, that the medical profession agrees with the advice, that health workers practise what they preach, and talk in terms intelligible to the public, that they appeal to basic wants, and avoid giving advice which the recipient may know or think not to be true in his case.

DERRYBERRY, M. Taking the Public with You. Health Officer. 2, 12:615 (Apr.), 1938.

Mumps — Encephalitis following mumps is not so unusual as it was thought to be and may occur when the symptoms are mild.

FINKELSTEIN, H. Meningo-Encephalitis in Mumps. J.A.M.A. 111, 1:17 (July 2), 1938.

Tick Fever—Where and when spotted fever infections have been reported over a period of 5 years. The Southeast and the Rocky Mountain states have had most cases.

HAMPTON, B. C., and EUBANK, H. G. Rocky Mountain Spotted Fever. Pub. Health Rep. 53, 24:961 (June 17), 1938.

Fats, Dyes, and Mystery—What every young lady health worker should know about soap, powders, creams, lotions, sunburn preventives, rouge, lipstick, dyes, nail polishes, hair tonics, deodorants, depilatories, etc., etc. Men will be interested, too. Health educators will wish for some way to measure the buying habits of lady sanitarians before and after taking this excellent advice.

HAZEN, H. H. Cosmetics. Am. J. Nurs. 38, 7:791 (July), 1938.

Counting Missing Teeth—Tooth mortality rates in grade school children in Hagerstown were determined by counting extracted permanent teeth. Analysis of the data is concerned with: mortality by kinds of teeth, in relation to fillings, and numbers of missing teeth per child.

KNUTSON, J. W. Studies on Dental Caries. Pub. Health Rep. 53, 25:1021 (June 24), 1938.

Some Working Hypotheses on Cancer—This we know: we can induce certain cancers at will, and prevent their appearance; but there are many well defined questions to be answered which may turn about two conceptions (1) irreversible metabolic changes leading to growth processes, and (2) interaction of growth stimulating factors and viruses. The paper should be read by all.

LOEB, L. The Causes of Cancer. Sci. Month., July, 1938, p. 51.

About Tuberculosis—Just about the clearest discussion of tuberculosis infection and resistance that has been presented to health workers. Instead of childhood and adult types of tuber-

culosis infection, the authors urge the use of primary infection and reinfection tuberculosis. Reinfection occurs when the forces of defense are down, or when the second invasion is overwhelming. Since 1850 the destructiveness of tuberculosis has waned, though it is still the chief cause of death in young and middle-aged adults, and hence our most important public health foe.

MARGULIS, A. E., and PINNER, M. Pathogenesis of Tuberculosis. Pub. Health Nurs. 30, 7:412 (July), 1938.

British Health Nurses and Ours—Comparing public health nursing in Great Britain and America, it is discovered that the major problems—insufficient nurses, inadequate educational facilities, unsatisfactory living conditions and salaries—are pretty much the same in both countries.

MCIVER, P. The Nurse's Contribution to the British Public Health Program. Health Officer. 3, 1-2:15 (May-June), 1938.

Variable Streptococci—Confirmation of the theory that when streptococcus cultures are aged under unfavorable conditions, small viable forms are produced which are capable of passing filters. Under suitable cultural conditions, they may assume visible forms. All this is very disturbing to us older sanitarians who learned our bacteriology when a streptococcus could be depended upon to remain a predictable germ.

NICHOLLS, E. E. A Study of the Organisms Recovered from Filtrates of Cultures of Hemolytic Streptococci. J. Infect. Dis. 62, 3:300 (May-June), 1938.

Canadian Milk Supplies—This series of papers covers about everything in its field: milk-borne diseases, laboratory methods, field supervision, pasteurization and tests for completeness, ending with the status of the milk supply in all Canadian municipalities.

PRICE, R. M. Bovine Tuberculosis in Children (and 15 other papers). Canad. Pub. Health J. 29, 6:251 (June), 1938.

Call to Arms against Cancer—Proposing a nation-wide cancer control scheme in which the state and federal governments might participate, the author points out that of the 420,000 annual deaths from cancer, from 25 to 30 per cent might be prevented by a thorough-going application of known control measures.

SCHERESCHEWSKY, J. W. The Prevention and Control of Cancer: A Plan for Nation-wide Organization. Pub. Health Rep. 53, 24:961 (June 17), 1938.

Menace of Mild Polio—Ill with poliomyelitis only 3 days, a child showed virus in the stools that persisted for 3 weeks. This suggests that mild and often unrecognized cases may be responsible for sewage pollution with the virus.

TRASK, J. D. Poliomyelitis Virus in Human Stools. J.A.M.A. 111, 1:6 (July 2), 1938.

ASSOCIATION NEWS

Nominations for the Governing Council

IN accordance with the By-laws of the Association, the Nominating Committee reports the following nominations for the Governing Council. The Constitution provides that "upon the petition of twenty-five Fellows, the Nominating Committee shall add the name of any Fellow to this list, providing such petition is received fifteen days before the Annual Meeting." The *Chairman* of the Committee is Dr. John J. Sippy, San Joaquin Local Health District, Stockton, Calif.

The ten Fellows receiving the highest number of votes on a written ballot cast by the Fellows present and voting at the Annual Meeting in Kansas City will be elected for the three year term 1938–1941.

W. W. Bauer, M.D.
American Medical Association,
Chicago, Ill.

Walter L. Bierring, M.D.
State Commissioner of Health,
Des Moines, Ia.

E. L. Bishop, M.D.
Tennessee Valley Authority,
Chattanooga, Tenn.

Charles F. Bolduan, M.D.
Department of Health,
New York, N. Y.

Maud A. Brown
State Board of Health,
Helena, Mont.

Homer N. Calver
American Museum of Health, Inc.,
New York, N. Y.

Selwyn D. Collins, Ph.D.
U. S. Public Health Service,
Washington, D. C.

Dorothy Deming, R.N.
National Organization for Public Health Nursing,
New York, N. Y.

J. V. DePorte, Ph.D.
State Department of Health,
Albany, N. Y.

Naomi Deutsch, R.N.
U. S. Children's Bureau,
Washington, D. C.

Godias J. Drolet
New York Tuberculosis and Health Association,
New York, N. Y.

Gordon M. Fair
Harvard University,
Cambridge, Mass.

Allen W. Freeman, M.D.
Johns Hopkins University,
Baltimore, Md.

Leonard Greenburg, M.D.
State Department of Labor,
New York, N. Y.

Gaius E. Harmon, M.D.
Herman Kiefer Hospital,
Detroit, Mich.

Emery R. Hayhurst, M.D.
Consultant in Industrial Hygiene,
Columbus, O.

Charles D. Howard
State Laboratory of Hygiene,
Concord, N. H.

Albert H. Jewell
Health Conservation Association,
Kansas City, Mo.

A. J. Lanza, M.D.
Metropolitan Life Insurance Company,
New York, N. Y.

James P. Leake, M.D.
U. S. Public Health Service,
Washington, D. C.

Nels A. Nelson, M.D.
State Department of Health,
Boston, Mass.

John F. Norton, Ph.D.
The Upjohn Company,
Kalamazoo, Mich.

J. L. Pomeroy, M.D.
County Health Officer,
Los Angeles, Calif.

I. C. Riggin, M.D.
State Health Commissioner,
Richmond, Va.

Grace Ross, R.N.
Department of Health,
Detroit, Mich.

Frederick W. Sabian, Ph.D.
Michigan State College,
East Lansing, Mich.

Vivien A. Van Volkenburgh, M.D.,
State Department of Health,
Albany, N. Y.

H. A. Whittaker
State Board of Health,
Minneapolis, Minn.

C.-E. A. Winslow, Dr.P.H.
Yale University,
New Haven, Conn.

C. C. Young, D.P.H.
State Department of Health Laboratory,
Lansing, Mich.

APPLICANTS FOR FELLOWSHIP

In accordance with the By-laws of the Association, the names of applicants for Fellowship are officially published herewith. They have requested affiliation with the Sections indicated. Action by the various Section Councils, the Committee on Eligibility, and the Governing Council will take place between now and the time of the Kansas City Annual Meeting.

Health Officer's Section

Paul H. Brown, M.D., Dr.P.H., Health Commissioner, Stamford, Conn.

Millard C. Hanson, M.D., Dr.P.H., Director of Health, Toledo, O.

Lester C. Krotcher, M.D., Director, Local Health Administration, State Division of Public Health, Boise, Ida.

Alex M. Lesem, M.D., Health Officer, City and County of San Diego, San Diego, Calif.

Aaron Leifer, M.D., M.S.P.H., Medical Officer-in-charge Brownsville Health District, New York City Department of Health, Brooklyn, N. Y.

J. W. Roy Norton, M.D., M.P.H., Assistant Director, Division of Preventive Medicine, State Board of Health, Raleigh, N. C.

Domingo F. Ramos, M.D., D.Sc., Director of Health, Havana, Cuba

John C. Sleet, M.D., Health Commissioner, Norfolk, Va.

Kenneth H. Sutherland, M.D., Health Officer, Orange County, Santa Ana, Calif.

James O. Wails, M.D., C.P.H., Director, Nashoba Health Unit, Ayer, Mass.

Laboratory Section

Henry E. Cope, M.D., Associate, Owen Clinical Laboratories, Detroit, Mich.

Joseph A. Kasper, M.D., Director, Bureau of Laboratories, Department of Health, Detroit, Mich.

Raymond E. Leach, A.B., Bacteriologist in Charge of District Public Health Laboratory, State Board of Health, Parsons, Kans.

John A. Toomey, M.D., Associate Pediatrist, University Hospitals, Cleveland, O.

D. Evelyn West, B.S., Chief Microbiologist, Bureau of Laboratories, State Department of Health, Hartford, Conn.

Public Health Engineering Section

Samuel D. Macready, Sanitary Officer, State Board of Health, West Palm Beach, Fla.

Thomas M. Riddick, M.S. in C.E., Consulting Chemist, New York, N. Y.

Industrial Hygiene Section

William McK. Gafafer, D.Sc., Research Associate and Senior Statistician, U. S. Public Health Service, Washington, D. C.

Leonard J. Goldwater, M.D., Sc.D., Senior Industrial Hygiene Physician, Division of Industrial Hygiene, New York State Department of Labor, New York, N. Y.

Harry F. Wilson, M.D., C.P.H., Director, Division of Industrial Hygiene, State Board of Health, Columbia, S. C.

Food and Nutrition Section

Matthew E. Highlands, S.M., Assistant Professor of Bacteriology, University of Maine, Orono, Me.

Abraham Lichterman, Phar.D., Acting Director of Foods and Drugs, Department of Health, New York, N. Y.

Ira A. Manville, M.D., Ph.D., Clinical Associate, Professor of Medicine, University of Oregon, Multnomah, Ore.

Rachael L. Reed, M.D., Director, Kansas City Dairy Council, Kansas City, Mo.

Henry T. Scott, Ph.D., Director of Research, Wisconsin Alumni Research Foundation, Madison, Wis.

Donald K. Tressler, Ph.D., Head, Chemistry Division, New York State Agricultural Experiment Station, Geneva, N. Y.

Child Hygiene Section

Jacob A. Salzmann, D.D.S., Director, Dental Service, New York City Vocational Schools, New York, N. Y.

Harry Strusser, D.D.S., Chief, Division of Dental Service, Department of Health, New York, N. Y.

Charles C. Wilson, M.D., Director of Health and Physical Education, Public Schools, Hartford, Conn.

Public Health Education Section

H. Shirley Dwyer, D.D.S., Supervising Dentist, Department of Health, New York, N. Y.

Public Health Nursing Section

Olive M. Whitlock, B.S., Director, Division of Public Health Nursing, State Board of Health, Portland, Ore.

Epidemiology Section

William L. Aycock, M.D., Assistant Professor of Preventive Medicine and Hygiene, Harvard Medical School, Boston, Mass.

Martin R. Beyer, M.D., State Epidemiologist, State Department of Health, Oklahoma City, Okla.

G. Howard Gowen, M.D., Ph.D., Assistant Epidemiologist, State Department of Health, Springfield, Ill.

Eschscholtzia L. Lucia, Ph.D., Assistant Professor of Biometry, University of California, San Francisco, Calif.

Henry E. Meleney, M.D., Associate Professor of Preventive Medicine and Public Health, Vanderbilt University School of Medicine, Nashville, Tenn.

Franklin H. Top, M.D., D.P.H., Medical Epidemiologist, Detroit Health Department and Herman Kiefer Hospital, Detroit, Mich.

Unaffiliated

Travis P. Burroughs, M.D., C.P.H., Secretary, State Board of Health, Concord, N. H.

Garner M. Byington, M.D., Director, Medical Relations, Department of Health, Detroit, Mich.

Frederick Eberson, M.D., Ph.D., Epidemiologist, Bureau of Communicable Diseases, Department of Health, San Francisco, Calif.

Walter H. Hartung, M.D., State Director of Health, Columbus, O.

John B. Hawley, M.S., Consulting Engineer, Fort Worth, Tex.

John O. McCall, D.D.S., Director, The Murry & Leonie Guggenheim Dental Clinic, New York, N. Y.

Harry E. Ungerleider, M.D., Assistant Medical Director, Equitable Life Assurance Society of the United States, New York, N. Y.

CLOSING DATE FOR SUBMITTING APPLICATIONS FOR FELLOWSHIP

SEPTEMBER 1 is the latest date the Committee on Eligibility can accept Fellowship applications. This date is set in order that there may be sufficient time to route them through the preliminary steps necessary before they receive final consideration at the hands of the Governing Council during the Kansas City Annual Meeting. Eligible members who wish to apply for Fellowship are therefore urged to submit their applications in the near future.

CORRECTION

In a review of the *Report on the British Health Services, by the Health Group of PEP*, published by PEP, 16 Queen Anne's Gate, London, published on page 787 of the June issue of the JOURNAL, an error appeared due to a mistake in the original *Report* which has been later corrected by an Erratum.

Instead of "... According to one of the tables, in 1933 and 1934 there were 59 diphtheria deaths per 1,000 boys, ages 2–5, and 55 diphtheria deaths per 1,000 girls, ages 2–5 ..." this should read "death rate per 100,000 living," not "per 1,000."

APPLICANTS FOR MEMBERSHIP

The following individuals have applied for membership in the Association. They have requested affiliation with the sections indicated.

Health Officers Section

Charles A. Arneson, M.D., 400½ Main St., Bismarck, N. D., City Health Officer

Manuel S. Barreto, M.D., C.P.H., 113 Soublet St., Valencia, Venezuela, S. A., Health Officer

Robert L. Cherry, M.D., C.P.H., State Dept. of Health, Kaufman, Tex., Director, Public Health District 3

Leo F. Chess, M.D., Reed City, Mich., Health Officer

Ramon Fernandez Marchante, M.D., Public Health Unit, Fajardo, P. R., Chief, Public Health Unit

C. K. Heady, M.D., 26 Cherry St., Milford, Conn., Health Officer

Willis B. Johnson, M.D., Box 1325, Rt. 4, Everett, Wash., Snohomish County Health Officer

William W. Kelly, M.D., Bellin Bldg., Green Bay, Wis., President-Elect, State Board of Health

Joseph T. Marshall, M.D., Gainesboro, Tenn., Assistant Director, Upper Cumberland Health District

William C. D. McCuskey, M.D., 60–14 St., Wheeling, W. Va., Member, West Virginia Public Health Council

William B. Nies, M.D., Court House, Fort Worth, Tex., Tarrant County Health Officer

Arthur B. Robins, M.D., 534 E. 87 St., New York, N. Y., Supervisor of Clinics, Bureau of Tuberculosis, Department of Health

Lloyd H. Smith, M.D., Box 418, Coulee City, Wash., Health Officer, Grant and Douglas Counties, and Grand Coulee District

Alvin L. Stebbins, M.D., 803 N. Palafox, Pensacola, Fla., Director, Pensacola-Escambia County Health Unit

H. E. Stroy, M.D., 107 S. Main, Osceola, Ia., Member, State Board of Health

Roy B. Weathered, M.D., Eldorado, Kans., Butler County Health Officer

Laboratory Section

A. P. Black, Ph.D., University of Florida, Gainesville, Fla., Professor of Agricultural Chemistry

Josephine M. Day, Santa Maria Hospital, Santa Maria, Calif., Laboratory Technician, Santa Barbara County Health Dept.

Melvin E. Koons, Box C, University Station, Grand Forks, N. D., Director, Public Health Laboratory

Norman C. Laffer, Ph.D., Box 4302, University Station, Tucson, Ariz., Teacher of Bacteriology, University of Arizona

Vital Statistics Section

Margaret M. Crowe, City Hall, Kansas City, Mo., Registrar, Bureau of Vital Statistics, Health Dept.

Rose A. Marks, 3218 Linwood Blvd., Kansas City, Mo., Statistician, Health Dept.

Pauline V. Turner, 2680 Bancroft Way, Berkeley, Calif., Student

Public Health Engineering Section

Raymond C. Freeman, Colerain, N. C., Sanitarian, State Board of Health

Arthur G. Fuller, 4554 S. 3rd, Louisville, Ky., Sanitary Engineer, City Health Dept.

Paul M. Kiel, 25 Sycamore St., Tiffin, O., State Dept. of Health (At present—Trainee at University of Michigan)

Sigvard J. Nielsen, 25 Fordonia Bldg., Reno, Nev., Sanitary Inspector, State Board of Health

Darvin E. Hoffert, 1214–14 Ave. N., Fargo, N. D., District Sanitation Supervisor, State Dept. of Health

James R. Spence, Fayette, Ala., County Sanitation Officer, State Board of Health

Industrial Hygiene Section

Hugh P. Brinton, Ph.D., 3016 Dumbarton Ave. N.W., Washington, D. C., Associate Statistician, Division of Industrial Hygiene, U. S. Public Health Service

Clayton L. Hawkins, M.D., 2701 Welton St., Denver, Colo.

Leroy W. La Towsky, 2506 N. 55 St., Omaha, Nebr., Student

Food and Nutrition Section

Wallace P. Elmslie, Ph.D., Moorman Mfg. Co., Quincy, Ill., Director of Research

Robert F. Huntley, Sealright Co., Inc., Fulton, N. Y., Technical Director, Charge of Bacteriological and Chemical Research and Control

Child Hygiene Section

Burke C. Brewster, M.D., 409 E. Weatherford St., Fort Worth, Tex., Director of Health, Fort Worth Independent School System

Rhoda Larsen, R.N., Mantua, Utah, Emery County Public Health Nurse

Mary W. Tobin, Duquesne University, Pittsburgh, Pa., Dean, School of Nursing

Public Health Education Section

Sidney F. Ascher, 42 Cherrydale Ave., Springfield, Mass., Student

Robert S. Drews, M.D., Dr.P.H., 3263 Joy Rd., Detroit, Mich., Student

Viola G. Pfrommer, Colby Junior College, New London, N. H., Chairman, Dept. of Health and Physical Education

Lewis C. Robbins, M.D., C.P.H., State Board of Health, Indianapolis, Ind., Local Health Administrator

K. Frances Scott, M.D., 33 State St., Northampton, Mass., Associate Professor of Hygiene, Smith College

Richard H. Shryock, Ph.D., Department of History, University of Pennsylvania, Philadelphia, Pa.

H. D. Voorhies, D.D.S., 2002 N. Hallock St., Kansas City, Kans., Assistant City Dentist

Public Health Nursing Section

M. Grace Fate, R.N., 221 Third St., Peoria, Ill., Staff Nurse, Health Dept.

Winnifred H. Jarvis, 19 North 2nd East, Brigham, Utah, City Public Health Nurse

Maria Johnson, Latter Day Saint Hospital, Salt Lake City, Utah, Superintendent of Nursing

Ima Martin, R.N., Milledgeville, Ga., Itinerant District Nurse, State Dept. of Public Health

Ila Z. Moore, 1115 E. High St., Jefferson City, Mo., Field Advisory Nurse, State Dept. of Health

Ellen Perdue, 314–14 St., Denver, Colo., Superintendent, Denver Visiting Nurse Association

Jessie M. Roach, Romney, W. Va., Hampshire County Public Health Nurse

Bertha B. Stevens, R.N., 475 E. Walnut, Springfield, Mo., District Public Health Nurse, State Board of Health

Epidemiology Section

George M. Leiby, M.D., Dr.P.H., State Board of Health, Raleigh, N. C., Consultant, Venereal Disease Control, Division of Epidemiology

Atilio Macchiavello, M.D., Dr.P.H., Casilla 3629, Santiago de Chile, S. A., General Director of Public Health

William E. Mosher, Jr., M.D., 65 Court St., Buffalo, N. Y., Epidemiologist-in-training, State Dept. of Health

Unaffiliated

Frederick Birnberg, D.D.S., 40 E. 49 St., New York, N. Y., Dentist, Department of Health

Marvin Liebman, 27 Lines St., New Haven, Conn., Student

DECEASED MEMBERS

R. S. Copeland, M.D., New York, N. Y., Elected Member 1918, Fellow 1922, Life Member 1936

Paul Eaton, M.D., Orange Park, Fla., Elected Member 1930

John N. Force, M.D., Dr.P.H., Berkeley, Calif., Elected Member 1920, Fellow 1934

Maurice C. Hall, Ph.D., D.V.M., Washington, D. C., Elected Member 1936

Vera H. Jones, M.D., Denver, Colo., Elected Member 1936

Renwick H. Leitch, D.Sc., Auchincruive, Ayr, Scotland, Elected Member 1933

EMPLOYMENT SERVICE

The Employment Service will register persons qualified in the public health field without charge. Public health nurses are registered with the Nurse Placement Service, 8 South Michigan Avenue, Chicago, Ill., with which the Association coöperates.

Replies to these advertisements, indicating clearly the key number on the envelope, should be addressed to the American Public Health Association, 50 W. 50 Street, New York, N. Y.

POSITIONS AVAILABLE

Two positions as medical director of county health units are open in Wisconsin. Duties largely administrative. Counties both rural, populations 15,000 and 40,000. Salaries: $3,300 per annum plus approximately $600 for travel. Applications may be sent to:

Dr. H. V. Gibson, Director
County Health Unit
Court House Annex
Eau Claire, Wis.

Dr. Milton Trautmann
State Board of Health
Madison, Wis.

POSITIONS WANTED

HEALTH OFFICERS

Physician, M.D., Class A medical school; M.P.H., Harvard School of Public Health; extensive experience in pediatrics and school medical service; also background of county health administration and teaching in medical school, will consider expanded opportunity in teaching or research. **A302**

Physician, M.D., St. Louis University; postgraduate in eye, ear, nose and throat; 10 years' experience in public health administration as director of county health units and epidemiologist with state department; also experienced in welfare administration, prefers administrative public health position in central or western state. Excellent references. **A373**

Physician, M.D., McGill; C.P.H., Johns Hopkins; excellent background of communicable disease control and school health service, seeks position as epidemiologist or public health administrator. **A368**

Experienced physician, administrator, epidemiologist, and teacher, now employed, with C.P.H. from Johns Hopkins, and 14 years' public health background, will consider position. Prefers epidemiology in city or state department. Excellent references. **A355**

Experienced administrative health officer with excellent background is available for a responsible position with adequate salary. **A375**

Physician, M.D., Class A school; M.S.P.H., University of Michigan, 1937; now serving as district state health officer, seeks full-time administrative position in city or county. **A367**

Physician, experienced in health administration of cities and states, will consider attractive opening in maternal and child health or health education. **A343**

Physician with Dr.P.H. degree from Yale, now employed by state department of health, will consider position in general health administration, in infant welfare or in epidemiology. **A300**

Physician, long experienced in public health laboratory work and general administration, will consider attractive position. **A295**

MATERNAL AND CHILD HEALTH

Woman physician with excellent medical training and background of public health nursing experience, seeks position in maternity and infancy work. **C376**

Specially qualified and experienced physician in maternal and child health, has been director of state and local maternity programs, will consider a responsible position. **A238**

Woman physician, graduate of University of Iowa, who has directed state bureau of maternal and child health, now employed, will consider another position. **C318**

HEALTH EDUCATION

Well qualified woman in health education wishes position as health coördinator or health counselor. Has wide experience and Ph.D. from New York University. **M236**

Woman, M.D., Boston University; special work Columbia and Massachusetts Institute of Technology; interested in psychiatry; with one year's experience in State Hospital, desires position in the East in hospital for mental diseases or industrial school. **H248**

MISCELLANEOUS

Physician, graduate of Johns Hopkins Medical School and well qualified in medicine and tuberculosis, will consider a clinical position in the medical field. **M377**

Laboratory position desired by well trained bacteriologist and immunologist in routine laboratory or research work. **L312**

Experienced teacher in bacteriology and public health; Ph.D., Cornell; now professor in Grade A medical school, will consider teaching, executive or administrative position. **M327**

NEWS FROM THE FIELD

Proposed Tuberculosis Program

A SIX year federal and state spending program to bring about the control of tuberculosis was approved by the board of directors of the National Tuberculosis Association at its annual meeting in Los Angeles, June 20.

It was proposed that the plan be sponsored by the federal government, and that part of the costs be obtained from states and local governments after the manner in which highways, parks and other improvements are arranged.

Such a program of control has been a topic of conversation among experts in the campaign against this disease since the time, 2 years ago, when the late Dr. Wade H. Frost, epidemiologist of Johns Hopkins University, pointed out that tuberculosis could be brought under national control.*

Since that time Mr. Homer Folks has been working out the plan. He laid the general principles of it before the board of directors of the National Tuberculosis Association last February and received their approval for a continuance of the study with a special committee of the association of which Mr. Folks was chairman. The program presented is, in effect, the report of that committee.

COSTS OF TUBERCULOSIS CONTROL PROGRAM AS ESTIMATED TO GO THROUGH 6 YEAR PERIOD

The following is a summary of the costs on a chronological basis of the tuberculosis control program advocated by the National Tuberculosis Association:

Fiscal Year	*Hospital Construction*	*Hospital Maintenance*	*Case Finding*	*Total Six-Year Program*
1939–40	$5,000,000	$7,000,000	$500,000	$12,500,000
1940–41	35,000,000	10,000,000	1,000,000	46,000,000
1941–42	35,000,000	16,000,000	2,000,000	53,000,000
1942–43	35,000,000	22,000,000	3,000,000	60,000,000
1943–44	30,000,000	28,000,000	4,000,000	62,000,000
1944–45	.....	30,000,000	5,544,000	35,544,000
	$140,000,000	$113,000,000	$15,544,000	$269,044,000

Estimated Federal participation by year and by purpose and total (construction at 80 per cent participation; maintenance and case finding at 50 per cent).

Fiscal Year	*Hospital Construction*	*Hospital Maintenance*	*Case Finding*	*Total Six-Year Program*
1939–40	$4,000,000	$3,500,000	$250,000	$7,750,000
1940–41	28,000,000	5,000,000	500,000	33,500,000
1941–42	28,000,000	8,000,000	1,000,000	37,000,000
1942–43	28,000,000	11,000,000	1,500,000	40,500,000
1943–44	24,000,000	14,000,000	2,000,000	40,000,000
1944–45	.....	15,000,000	2,772,000	17,772,000
	$112,000,000	$56,500,000	$8,022,000	$176,522,000

The program, as outlined, states as its general objective " to reduce tuberculosis throughout the United States in

* Frost, W. H. How Much Control Tuberculosis? *A.J.P.H.*, 27, 8:759 (Aug.), 1937.

the shortest possible time to a negligible factor in morbidity and mortality" and special objectives are to raise to the highest adequacy and efficiency tuberculosis control measures in all sections, and to intensify efforts in the best areas. Experimental demonstrations of case finding among the entire population or selected groups, and more adequate home relief for tuberculosis families, before, during, and after hospitalization of the patient, are suggested as special measures in these areas.

MOST ESSENTIAL MEASURES LISTED

"For the purposes of the program it is assumed that the most essential and immediately effective measures are: (1) case finding, including X-ray examination, among those who have been exposed to tuberculosis by family contact; (2) provision of hospital care for all cases of tuberculosis discovered needing such care, especially for sputum-positive patients; (3) federal leadership and financial aid, with actual operation generally left to state and local authorities . . ."

In estimating the annual costs of the 6 year program, 1939 to 1945, the report fixes the total at $269,044,000, including $140,000,000 for new construction, $113,000,000 for hospital maintenance, $15,544,000 for case finding. Maintenance and case-finding costs would not reach the maximum until the 6th year.

Association of Women in Public Health Plan All-day Meeting for October 24

THE Association of Women in Public Health is planning an all-day meeting immediately prior to the Annual Meeting of the American Public Health Association. As president, Sally Lucas Jean, Health Section Secretariat of the World Federation of Education Associations, announces 4 important sessions to be held on October 24. Three of these are scheduled at The Elms Hotel, Excelsior Springs, Mo.; the 4th, an evening banquet, at the Muehlebach Hotel, Kansas City, Mo.

Because Excelsior Springs is enroute to Kansas City for those travelling from the East, many members of the Association and guests are planning to spend the week-end at this famous health resort. Accordingly an informal tea has been scheduled for Sunday afternoon, October 23, to meet the officers of the Association and the committee on local arrangements.

At 9:30 Monday, October 24, the first session will meet in the drawing room of The Elms Hotel. A series of 10 minute talks on problems and programs affecting the specialists comprising the group will open this session. Women experts in health education, medicine, social hygiene, mental hygiene, maternal care, public health nursing, to mention a few of the interests of the group, will crystallize their ideas in their specific fields before the meeting is thrown open to the entire group.

At 1 P.M., also at The Elms Hotel, an open luncheon meeting will take up the subject of health centers from the angles of the preparation of the worker, rural and urban problems, lay understanding and participation, and the contribution of the various specialists to the problem.

At 3:30 the business meeting will be held to act upon the new constitution upon which the constitution committee has been working for the past year.

At 6:30 the annual banquet will be

held at the Hotel Muehlebach, Kansas City, when three prominent speakers will survey the field from the standpoint of past performance, present program, and future progress through lay support and participation. This banquet meeting will be open to all public health workers, men and women, and their staunch supporters in public health objectives—the public.

Rosamond Losh, executive secretary, Children's Bureau, 1020 McGee Street, Kansas City, Mo., is serving as chairman of the committee on arrangements. The Elms Hotel, Excelsior Springs, has arranged a special over-Sunday rate for those who plan a restful week-end under this roof. Those arriving on Saturday and leaving after luncheon on Monday will be accommodated at a flat rate of $11.25 per person. This rate includes luncheon and dinner on Saturday, 3 meals on Sunday, breakfast and luncheon on Monday. Guests will occupy double rooms. Therapeutic baths may be arranged for if desired. For those arriving on Sunday evening a rate of $5.00 will carry through the luncheon on Monday. As golf, horseback riding, tennis, beautiful drives and walks are all available at The Elms no Sunday program of events has been arranged. On October 22 an exhibition of fancy swimming and diving may be observed at the Hall of Waters.

SHELLFISH CONTROL

A QUARANTINE on mussels growing within the area from the southern boundary of Los Angeles County to the Oregon Line, exclusive of San Francisco Bay, has been established by the California State Department of Health.

The quarantine, which will continue through July, August, and September, prohibits the taking, sale or offering for sale of mussels growing within this area.

KANSAS COUNTY HEALTH OFFICERS

THE following County Health Officers have recently been appointed in Kansas:

Dr. Edwin R. Hill, Jr., Lyons—Rice County
Dr. August A. Meyer, Alma—Wabaunsee County
Dr. Orlin P. Wood, Marysville—Marshall County
Dr. Alfred J. Horejsi, Ellsworth—Ellsworth County
Dr. Benjamin Brunner, Wamego—Pottawatomie County
Dr. Raymond W. Moore, Eureka—Greenwood County
Dr. Frank A. Trump, Ottawa—Franklin County
Dr. Franklin R. Croson, Clay Center—Clay County
Dr. Benjamin L. Phillips, Paola—Miami County
Dr. Leon W. Zimmerman, Liberal—Seward County
Dr. Ivan B. Parker, Hill City—Graham County

The following reappointments have been announced:

Dr. Spencer B. Dykes, Esbon—Jewell County
Dr. Robert J. Lanning, Junction City—Geary County
Dr. Donald A. Bitzer, Washington—Washington County

OHIO FEDERATION OFFICERS

NEW officers were elected at the convention of the Ohio Federation of Public Health Officials, April 29, as follows:

President—R. H. Markwith, M.D., Akron
Vice-President—H. H. Pansing, M.D., Dayton
Secretary-Treasurer—W. D. Bishop, M.D., Greenville
Delegate—George D. Lummis, M.D., Middletown

VENEREAL DISEASE CONTROL IN VIRGINIA

ANNOUNCEMENT has been made of a program for the control of venereal disease in Richmond, Va., under the directorship of Dr. Francis W. Upshur, a graduate of the Medical College of Virginia.

PUBLIC HEALTH NURSE PLACEMENT

ON July 1, 1938, the Public Health Nursing Division of Joint Vocational Service, New York, N. Y., was transferred to Nurse Placement Service, 8 South Michigan Avenue, Chicago, Ill. The National Organization for Public Health Nursing approves this placement bureau, and is acting as an intermediary in the transfer of records at the request of registrants.

Elizabeth J. Mackenzie, R.N., Associate Director, Henry Street Visiting Nurse Service, New York, will become Assistant in the development of public health nursing vocational work as a member of the staff of Nurse Placement Service.

Anna L. Tittman, R.N., formerly Vocational Secretary for Public Health Nursing of Joint Vocational Service, is now Executive Director of Nurse Placement Service.

PARROTS BARRED IN NEW YORK

THE New York State Commissioner of Health recently announced that a sanitary code regulation prohibiting the importation, breeding or sale of birds of the psittacine or parrot family became effective June 1. A similar regulation will go into effect in New York City on July 1.

COÖRDINATION IN NEW YORK CITY

A JOINT committee representing the New York City Department of Health and the Board of Education has been established to coördinate problems relating to the welfare of pupils. The Department of Health has jurisdiction over the physicians and nurses, and the Board of Education bureau of health education supervises the general health program.

This is the first permanent committee to be set up to coördinate action on health problems by the two departments. Chest X-ray examinations for tuberculosis as well as other health undertakings will be made possible with the coöperation of the health department. Advice and counsel to school officers will be provided by the health department, together with medical examination to pupils.

MISSOURI PUBLIC HEALTH ASSOCIATION

THE Missouri Public Health Association held its 14th Annual meeting in Jefferson City on May 13–14, with an attendance of 125 public health workers.

Among the speakers were Governor Lloyd C. Stark, Dr. Thomas Parran and Dr. W. K. Sharp of the U. S. Public Health Service, and Dr. Frances C. Rothert of the U. S. Children's Bureau.

The following officers were elected:

President—Merl P. Moon, Ph.D.

President-Elect—Theodore R. Meyer, M.D.

1st Vice-President—Asa Barnes, M.D.

2nd Vice-President — Raphael Heyburn, R.N.

Treasurer—L. E. Ordelheide

Secretary—John W. Williams, Jr., M.D.

STREAM POLLUTION STUDY

PLANS are under way for the construction of a new Public Health Service laboratory in Cincinnati, Ohio, to house the Stream Pollution Investigations Division of the National Institute of Health. The present laboratory, located in the former Marine Hospital building, has carried on work in methods of combating stream pollution for the benefit of waterworks systems throughout the entire country.

VIRGINIA HEALTH UNIT

A NEW full-time health department began functioning in Buchanan County, Va., July 1. Since April 1, 1936, the county's health activities were conducted as a part of a district

composed of Tazewell, Russell, and Buchanan Counties.

Headquarters for the new unit will be in Grundy, Va.

PERSONALS

Central States

DR. OLIVER S. CRAISE, of Towner, N. D., has been appointed Superintendent of the McHenry County Board of Health.

DR. EDMUND STEPHEN DONOHUE, of Gregory, S. D., has been appointed Superintendent of the Gregory County Board of Health

DR. FRANCIS WELDON FORD, of Minnewaukan, N. D., has been appointed Health Officer of Devils Lake.

DR. RUSSELL R. HANSEN has been appointed Health Officer of Storm Lake, Ia., succeeding DR. EDGAR F. SMITH, who recently resigned after 8 years in the position.

ENOCH M. PORTER, M.D., of Great Falls, Mont., was elected President of the State Board of Health at its recent meeting in Helena.

DR. ARTHUR W. RECORDS has been appointed a member of the Franklin, Ind., Board of Health, to succeed the late DR. DANIEL R. SAUNDERS.

WILLIAM D. STOVALL, M.D.,* Professor of Hygiene, University of Wisconsin Medical School, Madison, Wis., has been appointed acting superintendent of the State of Wisconsin General Hospital, Madison, during the leave of absence of ROBIN C. BUERKI, M.D., to become Director of Study of the Commission on Graduate Medical Education.

ROBERT GILLAM WHITE, M.D.,† formerly of Ann Arbor, Mich., has been appointed to take charge of a new district branch of the North Dakota State Department of Health, with headquarters at Valley City.

Eastern States

JAMES L. BARRON, C.E.,* of White Plains, N. Y., resigned July 1 as Director of the Division of Sanitation of the Westchester County Department of Health. Mr. Barron will become County Sanitary Engineer and will organize a division of sanitation for the Department of Health in Nassau County, N. Y.

DR. FRANCIS BREWER has been appointed Health Officer of Brookfield, Conn.

RUFUS I. COLE, M.D., D.Sc.,† was recently honored at a dinner at the Rockefeller Institute for Medical Research. A bound set of volumes of reprints from the Institute hospital, from which he resigned as Director last year, was presented to Dr. Cole.

DR. WILLIAM L. HIGGINS has been appointed Health Officer of Andover, Conn.

DR. GEORGE S. LAMBERT has been appointed Health Officer of Killingly, Conn.

HARRY B. MELLER,† Managing Director of Air Hygiene Foundation, Pittsburgh, Pa., had the honorary degree of Doctor of Science conferred upon him by the University of Toledo, at the University's 55th annual commencement June 13. He is a Senior Fellow at Mellon Institute and has been in charge of air hygiene researches at that institution for 20 years.

HUGH G. ROWELL, M.D.,† is now associate adviser and associate chairman of the Department of Education of the Handicapped, at Teachers College, Columbia University, and Physician to the Horace Mann School, Teachers College, New York.

DR. JOSEPH L. ROY has been appointed Health Officer of Thompson, Conn.

* Fellow A.P.H.A.
† Member A.P.H.A.

GEORGE C. SHATTUCK, M.D.,† who has been for many years chairman of the executive committee of the Boston Health League, Boston, Mass., has recently become chairman of the Medical Advisory Committee of the Health Commissioner of Boston; chairman of the Advisory Committee for School Hygiene, City of Boston, for the director of the Department of School Hygiene; and president of the Massachusetts Central Health Council.

Southern States

JUSTIN M. ANDREWS, Sc.D.,† Associate Professor of Protozoölogy, School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Md., has been appointed Director of the Division of Malaria Investigation of the Georgia State Department of Health.

RALPH G. BEACHLEY, M.D.,* Deputy Director of Rural Health in the Virginia State Department of Health, has been appointed Health Officer of Arlington County, to succeed EARLE G. BROWN, M.D.,* who recently became Health Officer of Nassau County, at Mineola, N. Y.

DR. WILLIAM Y. GARRETT, of Raven, Va., has been appointed Health Officer of Prince William County.

GEORGE W. MAST, M.D.,† Director of the Holmes County Health Department, Lexington, Miss., has been appointed Director of the Washington County Health Department, Greenville, succeeding JOHN W. SHACKELFORD, M.D., M.P.H.,† resigned.

KENNETH F. MAXCY, M.D.,* has resigned as Professor and head of the Department of Bacteriology at Johns Hopkins University School of Hygiene and Public Health, to become Professor and head of the Department of Epidemiology. He retains temporarily his former position as Professor of Bacteriology at the School.

DR. JOHN A. MILNE,† of Jackson, Miss., has been appointed Director of County Health Work of the Mississippi State Department of Health, succeeding HENRY C. RICKS, M.D., C.P.H.,† resigned.

HENRY C. RICKS, M.D., C.P.H.,† for 10 years Director of County Health Work of the Mississippi State Department of Health, Jackson, Miss., was appointed Director of the State Hygienic Laboratory, effective May 1, following the retirement of THEODORE W. KEMMERER, M.S., M.D.,* who has served 14 years as Director.

CHARLES L. SAVAGE, M.D.,† of Charlottesville, Va., recently Director of the health unit of Tazewell, Russell, and Buchanan Counties, has been appointed Director of the Hanover County health unit, with headquarters in Ashland.

JOHN W. SHACKELFORD, M.D., M.P.H.,† of Greenville, Miss., for 8 years Director of the Washington County Health Department, has resigned to become Director of the technical field unit and serve as Advisory Officer for Health Units with the Oklahoma State Department of Health.

ALVIN L. STEBBINS, M.D.,† of Punta Gorda, Fla., has been appointed Health Officer of Escambia County, succeeding WILLIAM H. PICKETT, M.D.,* of Pensacola, resigned. Dr. Stebbins has recently been Health Officer of Franklin, Gulf, Liberty, and Calhoun Counties.

RAYMOND A. VONDERLEHR, M.D.,† Assistant Surgeon General, U. S. Public Health Service, Washington, D. C., dedicated the new venereal disease clinic to be operated by the Caddo-Shreveport Health Unit, Shreveport,

* Fellow A.P.H.A.
† Member A.P.H.A.

La. Four hundred patients daily will be accommodated in this clinic for syphilis and gonorrhea. This parish consists of approximately 45 per cent Negroes.

Western States

ELMER MCK. BINGHAM, M.D.,† of San Luis Obispo, Calif., Health Officer of Yolo County, has been appointed Health Officer in San Luis Obispo County, succeeding ALLEN F. GILLIHAN, M.D.,* retired due to ill health.

DR. NEIL F. BLACK, of Klamath Falls, Ore., Health Officer of Klamath County, has been appointed State Medical Relief Coördinator.

DR. JOSEPH M. BROWN has been appointed Health Officer of Ferndale, Calif., to succeed DR. OLIVER B. BARRON.

SETH H. MILES, M.D., of Santa Monica, Calif., has been appointed Health Officer of Mono County, succeeding ROBERT K. HARKER, M.D.,† of Bridgeport.

HARRY W. PASLEY has been appointed Health Officer of Reedley, Calif., to succeed DR. ROY E. ALLEN.

DR. ENOCH M. PORTER, of Great Falls, Mont., has been elected President of the Montana State Board of Health, at its recent meeting in Helena.

JOHN O. RAFFETY, M.D.,† of Oakland, Calif., has been appointed Health Officer of Yolo County, succeeding ELMER MCK. BINGHAM, M.D.†

ROLLO J. SHALE, M.D.,† has been appointed full-time Health Officer of Weld County, Colo., with offices in Greeley. Weld County is the second full-time unit recently established in Colorado.

DR. ELLIS D. SOX, of Berkeley, Calif., has been appointed Health Officer of Tulare County; the unit has recently been placed on a full-time basis. ELMO R. ZUMWALT, M.D.,† of Tulare, Health Officer of the unit on the former basis, continued as part-time Health Officer until June 1.

Canada

DR. BRABAZON J. HALLOWES has been appointed Health Officer of Alexis Creek, B. C.

DR. DONALD H. WILLIAMS, of Vancouver, B. C., has been appointed Director of the Division of Venereal Disease Control of the Department of Health of British Columbia.

England

DR. ELWIN H. T. NASH, Medical Officer of Health for the Borough of Heston and Ilseworth, has been elected President of the Society of Medical Officers of Health of England for the session 1938–1939.

DEATHS

JOHN N. FORCE, M.D., DR.P.H.,* of the University of California, Berkeley, Calif., recently died suddenly.

JAMES H. FOSTER, of Albany, N. Y., Director of the Child Aid Bureau of the New York State Social Welfare Department, died May 9, after 30 years' service in the state's employ.

MARY LUCIER,† died in Rochester, Minn., on July 10.

JOHN J. MULLOWNEY, M.D.,* since 1921 Professor of Public Health, and President of Meharry Medical College, Nashville, Tenn., retired July 1. Dr. Mullowney was Assistant Chief of the Pennsylvania State Department of Health 1913–1917, and head of the Department of Science and Professor of Chemistry and Hygiene, Girard College, Philadelphia, Pa., 1917–1921. His successor is DR. EDWARD L. TURNER.

* Fellow A.P.H.A.
† Member A.P.H.A.

CONFERENCES AND DATES

American Association of School Health. Kansas City, Mo. October 24–28.

American Association of State Registration Executives. Kansas City, Mo. October 25–28.

American Dental Association. Hotel Statler, St. Louis, Mo. October 24–28.

American Dietetic Association—21st Annual Meeting. Hotel Schroeder, Milwaukee, Wis. October 9–14.

American Federation of State, County, and Municipal Employees. Atlanta, Ga. August 29.

American Hospital Association. Dallas, Tex. September 26–30.

American Public Health Association — 67th Annual Meeting. Hotels Muehlebach, President, Kansas Citian, Kansas City, Mo. October 25–28.

American Public Works Association. New York, N. Y. October 3–5.

American Society of Civil Engineers. Rochester, N. Y. October 12–14.

American Water Works Association:
Central States Section. Hotel Windsor, Wheeling, W. Va. August 17–19.
Virginia Section. Hotel Robert E. Lee, Lexington, Va. August 25–26.
Rocky Mountain Section. Townsend Hotel, Casper, Wyo. September 12–13.
Michigan Section. Bancroft Hotel, Saginaw, Mich. September 14–16.
New York Section. Nelson House, Poughkeepsie, N. Y. September 22–23.
Minnesota Section. Minneapolis, Minn. September 29–October 1.
Wisconsin Section. Milwaukee, Wis. October 10–12.
Missouri Valley Section. Hotel Fort Des Moines, Des Moines, Ia. October 13–15.
Southwest Section. Biltmore Hotel, Oklahoma City, Okla. October 17–20.

Association of Military Surgeons of the United States. Mayo Clinic, Rochester, Minn. October 13–15.

Association of Women in Public Health —17th Annual Conference. Excelsior Springs, Mo., October 23–24; Kansas City, Mo., October 24.

California Association of Dairy and Milk Inspectors. Santa Barbara, Calif. September 6–9.

California League of Municipalities. Santa Barbara, Calif. September 6–9.

Conference of State Laboratory Directors. Kansas City, Mo. October 24.

Conference of State Sanitary Engineers. Kansas City, Mo. October 24.

Florida Public Health Association. Hollywood, Fla. December.

International Association for Identification. Columbus, Ohio. August 16–20.

International Association of Milk Sanitarians. Cleveland, Ohio. October 19–21.

International Society of Medical Health Officers. Kansas City, Mo. October 24.

Medico-Military Inactive Duty Training Unit—under auspices of the Mayo Foundation. Mayo Clinic, Rochester, Minn. October 13–15.

Michigan Public Health Association. Lansing, Mich. November 9–11.

Mississippi Valley Conference on Tuberculosis—25th Annual. Twelve states represented. Hotel Statler, St. Louis, Mo. September 21–24.

National Dairy Association. Columbus, Ohio. October 8–15.

National Hospital Association (Negro). Hampton, Va. August 14–16.

National Institute for Traffic Safety Training. University of Michigan, Ann Arbor, Mich. August 8–20.

National Medical Association. Hampton, Va. August 15–19.

National Recreation Association. Pittsburgh, Pa. October 3–7.

National Safety Council. Chicago, Ill. October 10–14.

New England Sewage Works Association. (Joint meeting with the New York State Sewage Works Association.) Hotel Bond, Hartford, Conn. October 6–8.

New Mexico Public Health Association. Las Vegas, N. M. October 31, November 1–2.

New York State Sewage Works Association—Fall Meeting (joint meeting with New England Sewage Works Association). Hotel Bond, Hartford, Conn. October 6–8.

Northern California Public Health Association. January, 1939.

Southern Branch, American Public Health Association—7th Annual Meeting; and Southern Medical Association. Oklahoma City, Okla. November 15–16, 1938.

Symposium on Mental Health. Auspices of the American Association for the Advancement of Science—Section on Medical Sciences. Richmond, Va. December 27–31.

Texas Public Health Association. San Antonio, Tex. November 7–9.

Third International Congress for Microbiology. Waldorf-Astoria Hotel, New York, N. Y. September 2–9, 1939.

U. S. Public Health Service—Committee on Evaluation of Serodiagnostic Tests for Syphilis, Surgeon General Thomas Parran, Chairman. Assembly of Laboratory Directors and Serologists. Hot Springs National Park, Ark. October 21–22.

FOREIGN

International Meeting for Cell Research. Anatomical Institute, Zurich, Switzerland. August 7–13.

International Congress on Housing and Town Planning. Mexico City, Mexico. August 13–20.

Sixteenth International Physiological Congress. Zurich, Switzerland. August 14–18.

British Association for the Advancement of Science. Cambridge, England. August 17–24.

International Veterinary Congress, Thirteenth. Zurich and Interlaken, Switzerland. August 20–27.

Medical Association of South Africa—Annual Medical Congress. Lourenço Marques (near Delagoa Bay, seaport resort), Port E. Africa. September.

International Congress for the History of Medicine, Ninth. Zagreb, Yugoslavia. September 3–11.

Pan American Sanitary Conference, Tenth. (Last Conference was held in Buenos Aires, 1934.) Bogota, Colombia. September 4–18.

Special International Conference on Sewage Works and Disposal. Glasgow, Scotland. September 12–18.

Third United International Congress of Tropical Medicine and Malaria. Amsterdam, The Netherlands. September 24–October 1.

French Medical Congress—25th Annual. Marseilles, France. September 26–28.

Eighth International Congress of Industrial Accidents and Occupational Diseases. Frankfort-am-Main, Germany, September 26–30.

French Pediatric Congress—10th Annual Meeting. Medical Amphitheatre, Children's Hospital, Paris, France. October 6–8.

Conference on Rural Hygiene in American Countries. Mexico City, Mexico. November 10.

Pan-American Congress of Municipalities. Havana, Cuba. November 14–19.